8.

ANNUAL REPORT

OF THE

State Board of Health

OF

MARYLAND

FOR THE

YEAR ENDING DECEMBER 31, 1907

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State Board of Health of Maryland, 1907.

DR. WILLIAM H. WELCH, President	BALTIMORE.
DR. EUGENE JONES	KENSINGTON.
DR. LOUIS A. GRIFFITH	UPPER MARLBORO.
DR. JAMES BOSLEY, Health Commissioner of Baltimore city (ex-officio).	
HON. WILLIAM SHEPARD BRYAN, Attorney-General of Maryland (ex-officio).	
MR. DOUGLAS H. THOMAS, JR.	BALTIMORE.
*DR. MARSHALL LANGTON PRICE, Secretary	BALTIMORE.

DR. C. W. G. ROHRER, Medical Assistant	BALTIMORE.
DR. WM. B. D. PENNIMAN, Chemist	BALTIMORE.
DR. WM. R. STOKES, Bacteriologist	BALTIMORE.
DR. HARRY W. STONER, Asst. Bacteriologist	BALTIMORE.
CHAS. N. MITTEN, Inspector	BALTIMORE.
M. L. RULLMAN, Chief Clerk	BALTIMORE.
M. MICHEL, Clerk and Stenographer	BALTIMORE.
J. H. TOMLINSON, JR., Assistant Clerk	BALTIMORE.
J. M. CONWAY, Assistant Clerk	BALTIMORE.

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*Dr. John S. Fulton, Secretary up to May 1st, 1907 (resigned).

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PREFACE

To His Excellency
AUSTIN L. CROTHERS,
Governor of Maryland,
Annapolis, Md.

Sir: The report of the State Board of Health of Maryland for the year 1907 is transmitted herewith by the Secretary.

The annual report of the Board is again in arrears, owing to the pressure of routine matters, but we have employed additional office force temporarily, and are beginning to bring our reports up to date. Owing to the fact that the return of Vital Statistics are not complete until after the tenth of January of the succeeding year, and also to the fact that compiling and tabulating these returns is a labor of several months, the annual report must always necessarily be nearly a year in arrears.

The most important recommendations made by the Secretary are those for an increased force and larger office accommodations, and also for the necessity of legislation for the systematic control of public water supplies and sewage disposal.
In these recommendations I fully concur.

Most respectfully yours,
William H. Welch,
President.

LETTER OF TRANSMITTAL.

Office of the State Board of Health of Maryland,
No. 10 South Street.

Baltimore, *December* 29, 1909.

To His Excellency
AUSTIN L. CROTHERS,
Governor of Maryland.

Sir: In accordance with the provisions of Sections 5 and 6 of Article 43 of the Code of Public General Laws, I am transmitting to Your Excellency, herewith, the Report of the State Board of Health for the year 1907.

This Report includes a synopsis of the Vital Statistics of the State, in accordance with the provisions of Section 6 of the Article quoted, and also a summary of the other official actions of the Board during this year.

Up to May 1, 1907, the Board was under the administration of my predecessor, Dr. John S. Fulton, who resigned May 1st to become Secretary-General of the International Congress on Tuberculosis.

As I have previously pointed out to your Excellency, the functions of this Board are mainly directed towards diminishing the death rate and increasing the duration of life.

During the year 1907 there were 20,982 deaths registered in Maryland, of which 11,190 occurred in Baltimore City and 9,792 in the remainder of the State. The death rate for the State at large was 16.11 per 1,000, as compared with a death rate of 17.85 for the year 1906. In Baltimore City the death rate was 20.14, as against 13.34 in the rural portion of the State.

The U. S. Census Bureau, which estimates the population of Maryland according to a slightly different plan from that employed by the State registration office, gives a general mortality for Maryland of 16.1, which corresponds with the estimate of this office. During 1906 Maryland had the second highest mortality among the registration States. This was doubtless due to the fact that Maryland is the only registration State having a large colored population. The general mortality among the white population in 1907 was only 14.76 per 1,000. Owing to the low mortality in Maryland during 1907, this State had the lowest mortality among the 15 registration states for the year, with the exception of Indiana, Michigan and South Dakota.

The average age at death for 1907 was 37.86 years, as compared with 36.40 years in 1906.

In order to secure a proper measure for the duration of life (which is the proper measure of the sanitary condition of the State), we have made use of a *biometric ratio* constructed from the figures appearing in Table XXVA, page 79.

The *biometric ratio* for 1907 was 92.8/160, while for the year 1906 the ratio was 93/160.

It will be seen that the *biometric ratio* for 1907 was lower than that for 1906, although the death rate was lower in 1907 than in 1906, and the average age at death was higher.

The cause for this anomalous condition appears in Table XXVIA, page 82, from the examination of which it will be seen that the low *biometric ratio* was wholly due to a high mortality under the age of 5 years. Thus the death rate per 1,000 for children under 5 was 44.40 per annum in 1907, while it was only 41.97 in 1906. The death rates for all the other ages show a distinct dimunition in 1907. The bulk of this high mortality among children, and especially among young infants, was due to distinctly preventable diseases. Cholera infantum, the acute contagious diseases of childhood, and lack of proper care in early life accounted for the bulk of this mortality.

As your Excellency will note by an examination of the tables, over 30 per cent. of the total number of deaths occurs before the fifth year of life. This constant drain upon one of the most valuable resources of the State is due mainly to ignorance and lack of proper sanitary control.

Your Excellency will note from Table XIV, on pages 36 and 37, and from the accompanying chart on page 38, that almost one-half (44.52 per cent.) of the total deaths in our State are due to the preventable parasitic diseases. The bulk of the remainder are made up of the degenerations of old age and deaths from violence.

According to our figures the population of Maryland in 1907 was 1,296,754. The estimated colored population was 257,596. In Maryland the female sex exceeds the male by almost 10,000. The estimated figures are, males, 645,759; females, 656,163. A little less than one-half of the total population is in Baltimore City, 555,646. The natural rate of increase, independent of immigration, is about 25 per cent.

As has already been pointed out to your Excellency, although the State is the unit in sanitary matters, the efficiency of the State government in health matters is directly dependent upon the efficiency of the local boards of health throughout the State. There were in 1907 53 local sanitary governments in the State, not including the Health Department of Baltimore City. Of this number 23 were county health officers, 16 town health officers. There were also 15 district health officers in Baltimore county. Of these 23 county health officers, 12 have furnished annual reports. The remainder have not furnished reports as required by the laws of Maryland. Five of the town health officers have furnished annual reports and 10 of the district health officers.

These reports appear in pages 109 to 137 of this report. The material contained in many of these reports is very valuable, and your Excellency will observe the efficient work which many of these health officers have accomplished. The financial and other support given to these officers by the authorities is generally very much less than is justified by the importance of their work and by the valuable services which many of them render to their communities.

INFECTIOUS DISEASES.

Smallpox.

Smallpox appeared in several parts of the State during 1907. In two instances the outbreaks were recrudescences of latent epidemics, which had been smouldering unrecognized since 1906.

The most extensive epidemic of smallpox occurred at and in the vicinity of Rock Hall, Kent county. The worst feature of this outbreak was the tendency of some of the citizens to adopt an attitude antagonistic to the health authorities of the county and State. This tendency and the public declaration of some of the citizens, that smallpox did not exist in the county, made it necessary for the State Board of Health to shut off communication with Rock Hall by water. The steamboat service was discontinued by order of the Board in the early part of February. This action on the part of the Board had the desired effect, and the citizens of the town petitioned to have the quarantine removed, promising their full support in all measures of necessary control. This epidemic was quite mild, the majority of the cases being mild discrete, with a few "severe discrete." The disease was eradicated by the middle of September. The disease invaded Baltimore City from Rock Hall twice, but was cut short without any further cases resulting. There were 32 cases in all from January 1st to September.

Smallpox was introduced into Baltimore county the latter part of November by a colored man who had been traveling with a circus in Indian Territory. He had undoubtedly traveled in a railway coach while sick with a moderately severe attack of smallpox. He spent a great deal of his time in a saloon, and all of the early secondary cases occurred in the family of the saloon keeper and in the house of his brother, where he lived. One of the other cases played pool with the patient during the later stages of his disease. The means of infection was not traced in one case. Seven cases altogether resulted from this one man, all in Highlandtown and Canton. Additional cases developed during the January of the succeeding year, and apparently the disease was then eradicated. The disease broke out, however, in the spring months of 1908 in a distant part of Baltimore county, and these later cases were finally traced back, with a great deal of difficulty, to the outbreak at Highlandtown and Canton.

Sporadic cases, both probably imported, occurred at Emmitsburg and Lansdowne.

TYPHOID FEVER.

Typhoid fever was responsible, as usual, for a large number of deaths and a great deal of lingering sickness during 1907. The disease was largely endemic rather than epidemic. Extensive epidemics are now becoming infrequent in Maryland with the more efficient development of sanitary organization. The great bulk of the cases were sporadic, or occurred in small groups in families.

The disease was more or less constantly present in Cumberland, where the water supply is very bad. As often occurs in cities and towns having a badly polluted water supply, the disease occurs frequently during the winter months.

A small epidemic occurred at Cambridge during July. There were 21 cases during this month, with one death.

ACUTE INFECTIOUS DISEASES.

A mild epidemic of measles prevailed in Baltimore county during May, in Reisterstown and vicinity. There were about 100 cases altogether.

About the end of November an increase in the number of deaths from influenza became noticeable, and by the early part of December the disease was epidemic in Baltimore City. Other parts of the State soon began to report epidemics. During December reports of epidemics of influenza were received from Annapolis, Montgomery county and the Fourth District of Baltimore county. The disease was at first mild, but became more severe as the epidemic progressed.

In January of the following year the disease became more fatal and the death returns began to augment in volume. The disease proved quite fatal to infants and the aged. From the manner of the spread of the disease and from the almost universal susceptibility of the population, it seems clear that the disease was the true Asiatic or epidemic influenza, in distinction to the endemic influenza, which is always present in Maryland in greater or lesser degree.

TUBERCULOSIS.

Tuberculosis led the list in the number of deaths in 1907. About one death in every 10 was due to tuberculosis during this year. The State Board of Health lent its energies to increase the number of registrations and to see that measures of prevention were applied in all infected houses in accordance with the provisions of Chapter 399 of the Acts of the General Assembly of 1904. The number of cases of tuberculosis registered during 1907 was 1,956. The attending physicians gave the regular prophylactic instruction authorized by the Board in 439 cases. Prophylactic supplies were issued by the Board for 2,901 cases.

During the month of November the first case of prosecution for renting premises vacated by the death or removal of a consumptive occupant without such premises having been previously disinfected by the health authorities, was successfully instituted by the Department of Health of Baltimore, and resulted in a conviction. The State Board of Health assisted as far as possible in this prosecution.

VITAL STATISTICS.

The number of infractions of the burial permit law during 1907 was rather small. There were a number of cases of bodies transported into the State over railway or steamboat lines in violation of the regulations of the Board. The majority of these bodies were from States where the laws were lax or contained no provisions for the legal disposal of dead bodies. As I have already pointed out to your Excellency, the burial permit law is the greatest safeguard which the State has thrown around human life as well as the most reliable defense against epidemics.

There were 13 illegal interments of dead bodies in the State during the year which came to the knowledge of the Board, all of which were prosecuted. The result of these prosecutions was 11 convictions. There were 16 bodies illegally transported into the State. Prosecutions were instituted against the employees of the railroad who removed two bodies of persons killed on the railroad out of the jurisdiction of the State into West Virginia. Through an error in the evidence filed by the county official with whom jurisdiction would lie, warrants were taken out for the wrong people, and it was necessary to abandon the cases.

During June a plan of comparison and investigation was devised by the U. S. Census Bureau whereby we were able to locate promptly practically all of the unregistered deaths in the State. From the first figures of the Census Bureau, it appeared that 426 deaths occurred in Maryland in 1907 which were not registered. More careful comparison, however, reduced this number to 113, and these were further reduced by investigations made from this office.

FOOD AND DRINK.

The Board has, as usual, continued its routine work in the examination of water supplies, both public and private, and the examination of market milks. Beginning in June, the Board instituted a vigorous campaign against the use of preservatives in milk. The majority of milks in which preservatives were found contained formaldehyde. A few samples contained borax. The Board fully realized the dangers of formaldehyde in milk, especially when used as an exclusive diet for infants and young children. At least one death was ascribed by the attending physician, though how correctly we can not say, to the use of milk containing formaldehyde.

Formaldehyde is also dangerous, as it prevents the souring of dirty (and consequently dangerous) milk, which is a valuable sign of danger, and which prevents the use of a great deal of milk which would otherwise be used unwittingly. Formaldehyde, in the quantity which is generally employed for preserving milk, does not kill any of the dangerous organisms which the milk may contain.

Special investigations were made of the milk supplies of Towson (in May); of Roland Park (in June), and of Cumberland.

Thirteen arrests were made during the year for the use of formaldehyde and borax in milk, with nine convictions. In one case the Grand Jury failed to indict. One case was brought in the United States Courts against an individual shipping formalized milk into Maryland from Pennsylvania.

During the year the Board co-operated with the United States Public Health Bureau in an investigation of epidemic diseases in Maryland conveyed by milk. This investigation was made at the request of the President. The disease most commonly conveyed by milk in Maryland is typhoid fever, but it is also responsible for a considerable proportion of the deaths from diphtheria, scarlet fever and tuberculosis.

The routine inspection of market meats from animals killed in the abattoirs in the neighborhood of Baltimore was continued during 1907. Previous to October 1, 1906, two inspectors of the Board had to cover all of the beef animals killed in the neighborhood of Baltimore. Subsequent to this date, however, the Federal Inspection law went into effect, and the inspectors have consequently been able to devote the greater part of their time to the smaller plants on the outskirts of Baltimore, where inspection is most needed. Practically all of the larger plants furnishing beef to Baltimore have now a very efficient system of Federal inspection.

BACTERIOLOGICAL LABORATORY.

During the year 1907 the total number of examinations made in the bacteriological laboratory was 3,251. In addition to the routine examinations for the diagnosis of contagious diseases, which includes the diagnosis of tuberculosis, typhoid fever, diphtheria and malaria, 30 specimens of milk and 484 specimens of water were examined. The laboratory is extending its work to the examinations of foods other than milks. During the year a number of examinations of ginger ale and beer were examined bacteriologically. The bacteriological laboratory is maintained jointly with the city. The bacteriologist of the State Board of Health is also the City Bacteriologist. The cost of maintaining the laboratory under this arrangement is less than $3,000 a year. In the routine examination of specimens for the diagnosis of the infectious diseases, the Board is able to prevent the occurrence of many epidemics. Timely warning can also be given of the pollution of public and private water supplies. The laboratory returns to the State many fold the small amount spent upon its maintenance. The laboratory has attained a national reputation for the quality of its work, and is fully deserving of the full support of the State. In my opinion, no bureau of the Board accomplishes more important work.

The routine work of the laboratory in 1906 included the following examinations:

Examinations of blood for the typhoid reaction, 1,123.

Examinations of blood for the malarial parasite, 293.

Examinations of sputum for tuberculosis, 781.

Examinations of swabs from the throat for diphtheria, 401.

Water examinations, 484; milk examinations, 30. Examinations of other foods, 136.

CHEMICAL LABORATORY.

The routine work of the chemical laboratory was mainly confined to the examination of public and private water supplies and market milks. As the legal standard for milk in Maryland is wholly chemical, all of the prosecutions instituted for the sale of adulterated milk had to depend upon the analyses made in the chemical laboratory. A special appropriation of $500 is available for the examination of vinegar. While there are other foods much more important, we have endeavored to obey the mandate of the Legislature in this respect, and have collected samples of vinegar as far as possible in connection with other work. The total number of examinations of vinegars made in 1907 was 12.

CASES EXAMINED FOR DIAGNOSIS.

Under the laws of Maryland the State Board of Health is made the final authority in the diagnosis of diseases believed or suspected to be of a contagious character. This always places a considerable responsiblity upon the Board, for a diagnosis, if positive, may involve a community in a financial loss of hundreds or even thousands of dollars. On the other hand, failure to properly diagnose a contagious disease may result in a widespread epidemic costing numerous lives and a large amount of money. The Legislature has demonstrated a considerable degree of wisdom in thus constituting a final court of appeal in the diagnosis of contagious diseases, and the decision of the Board is seldom questioned.

During 1907 there were examined for diagnosis the following cases. Examined for smallpox, 11; disease found in 8. The remaining three cases proved to be measles. Examined for yellow fever, 1, disease found in none. Examined for scarlet fever, 1, disease found in none (diagnosis, "erythema multiforme").

INSPECTION OF INSTITUTIONS.

Under the Maryland laws the Secretary is charged with the important duty of making sanitary inspections of institutions.

The law directs that the Secretary shall make these inspections "from time to time, and whenever directed by the Governor to do so." This important duty has been greatly neglected owing to the pressure of other business.

During 1907 two institutions were inspected in compliance with this law. One was Public School No. 2, at Riverdale, Prince George's county. This school, in common with many of the public schools of Maryland, was found very much overcrowded. One room contained five times as many children as it properly should have accommodated, and the other room ten times as many. There were no arrangements for artificial ventilation. As was to have been expected, tonsilitis, glandular enlargements and infections of the respiratory tract were very common among the children.

As a result of this inspection, arrangements were made to enlarge the school accommodations by increasing the size of the building.

During November, 1907, I also inspected St. Timothy's School, at Catonsville, where two cases of typhoid fever had arisen. The sanitary condition of this school was found to be excellent. One of the cases of typhoid fever was clearly imported from outside of the State. The origin of the other was doubtful.

DIPHTHERIA ANTITOXIN.

During the fall of 1907 the Board completed arrangements for the distribution of antitoxin to the several local boards of health. The Board has acted merely as a distributing agency in this respect. The cost of supplying antitoxin to indigent persons is met by the several local boards of health.

The advantages of the arrangements are a low price and the keeping on hand of a sufficiently large stock to insure prompt distribution to all the local health boards. This arrangement has been followed by a considerable fall in the mortality from diphtheria in the State.

WATER SUPPLIES.

SANITARY SURVEYS OF WATER SUPPLIES AND SEWAGE DISPOSAL.

During 1907 the Board made a number of sanitary surveys of public water supplies and methods of sewage disposal.

Several weeks were devoted to the sanitary survey of Mt. Washington, Baltimore county, where typhoid fever had been prevalent during the latter part of 1906. A large amount of valuable data was collected which has not yet been fully analyzed. A sufficient amount of information was collected, however, to reasonably insure Mt. Washington against a recurrence of another extensive epidemic.

The Board has co-operated with the Baltimore City Water Board in the endeavor to protect the city water supply. The Board has furnished an inspector who has examined, with the Water Board, a number of sources of pollution upon the Lake Roland and Gunpowder watersheds. The most serious pollutions of the city water supply are cesspools, the overflow of which pass into streams emptying into the Lake Roland and the Gunpowder River. Numbers of these cesspools have been flushed with coloring matter, and the overflow traced into streams tributary to the city water system.

During May a sanitary survey was made of the North Branch of the Patapsco River near Westminster. The manufacturing refuse of a tannery and a large distillery emptied into this stream. Both of these wastes gave rise to nuisances, and the distillery waste caused the growth of a *saprolegnia* in the stream which gave rise to an intolerable odor along its banks. There was especial complaint from the citizens of Patapsco and Carrollton. This nuisance was thoroughly investigated in the bacteriological and chemical laboratories, and the petitioners and officers of the corporations concerned were given an opportunity to be heard before the Board at the regular June meeting. As a result of this hearing, injunctions were issued by the Board against the officers and employees of both corporations. This stream also furnishes water to a considerable part of Baltimore county.

On August 6th I made a sanitary survey of the water supply of Union Bridge, Carroll county. The water supply is derived from six so-called artesian wells. The subsoil was found to be extensively polluted. The colon bacillus, indicating pollution with intestinal discharges, was found in the town water supply. An opinion was given upon this supply during October, in which it was severely criticised. The water supply continues, however, in the same condition in which it existed at the time the survey was made. Typhoid fever, evidently caused by the polluted water, was prevalent in Union Bridge at the time the sanitary survey was made, and epidemics have occurred since in 1908 and 1909. These conditions will illustrate to your Excellency the need of more stringent State regulations for the control of public water supplies.

We were also called upon during July to advise the Mayor of Pocomoke City in reference to the water supply of the town.

The town has expended $10,000 in sinking three artesian wells. None of these had proven satisfactory on account of the high proportion of chlorides in all of the deep water-bearing strata in this portion of the Eastern Shore.

The amount of chlorine progressively increases as the lower strata are reached. I advised the Mayor to install a filtration plant for the surface or subsoil water, with a capacity of 100,000 gallons daily.

During August and September a sanitary survey was made of Herring Run, a stream supplying Highlandtown and Canton ton—about 10,000 persons all told. The sources of pollution were found to be numerous and dangerous. They included pigpens, earth closets, cesspool overflows and night-soil fertilizer used along the banks of the stream. The attempt to abate the more serious nuisances along the stream began in 1906, and was continued for two years before the stream was put in fairly satisfactory condition. At this time Herring Run was the worst water supply of any community in the State of its size.

During August the water supply of Cumberland was again examined and again found polluted. The water supply of Cumberland is derived from the Potomac River (North Branch) and is subject to numerous pollutions higher up.

In connection with these sanitary surveys I must point out to your Excellency that this work is, in my opinion, the most important done by the Board, with the exception of its work in the control of tuberculosis. Undoubtedly many lives have been saved by these sanitary surveys, with the exercise of even the imperfect powers which the Board now possesses. In order to accomplish effective results the Board urgently needs the services of a good sanitary engineer and draughtsman capable of making sanitary inspections of the watersheds, and good maps.

NUISANCES.

A large mass of correspondence passes through the office of the Board every year in reference to the abatement of nuisances. Upon this subject the Board gives a great deal of advice and opinions as to the legal and sanitary aspects of the individual cases. The abatement of nuisances is generally left to the local health authorities. The Board has to assume jurisdiction, however, when disputes between two boards arise relative to their respective duties in the abatement of nuisances, and also in those cases where a nuisance involves two jurisdictions.

A nuisance caused by an open drain passing from the town of Centreville into the surrounding country, and lying partly in the jurisdiction of the Mayor and Town Council of Centreville and partly in the jurisdiction of the County Commissioners of Queen Anne's county, was taken up by the Board in 1907 and later abated.

During September an investigation was made of a nuisance caused by the discharge of the waste of several canning factories into Cambridge Creek, a small stream passing through Cambridge. The fermentation of the juices and the solid refuse settling down to the bed of the stream was alleged to produce an intolerable nuisance during the hot weather. A conference was held with the canners, and the county health officer at Cambridge. It was decided to allow the canners to strain out the solid particles from the refuse, to thoroughly flush the drains and to mix the juice with as large a volume of water as possible immediately. The canners were allowed to try this plan during one season before resorting to more stringent measures.

An examination of the water supply of Cambridge, also the milk supply, was made during October. The town water supply was found to be good. The majority of the private wells were polluted.

HEALTH OFFICER'S BULLETIN.

During May the Board began the publication of a "Health Officer's Bulletin." This was the first systematic attempt made in Maryland to institute a systematic and business-like method of control for the acute infectious diseases. This Bulletin contains the names and addresses of all cases of contagious diseases reported, with the age and duration of illness. With this definite information, when complete, we can trace the progress of epidemics and institute means for their prompt control before the danger has arisen. The Bulletin also gives timely information of cases of intestinal disease upon the watersheds, so that communities can take prompt measures for the protection of their water supplies. The Bulletin comments upon and analyzes the information it contains and also disseminates information and advice upon subjects connected with hygiene.

PUBLIC EXHIBITIONS.

The State Board of Health has taken an important part in the education of the public in hygienic matters through popular exhibitions. During 1907 the State Board of Health furnished an exhibit to the National Drainage Conference, which met in Baltimore during November.

CONCLUSION.

As I have frequently pointed out to your Excellency, the close of each year leaves us with a large mass of unfinished work, some of which never will be completed. We can not now properly fulfill one-third of the demands which the public and State and local officials make upon us. I do not think the Board can be criticised for its failure to meet all of these popular demands. It would be easy to handle many of these matters in a superficial way, but we have never felt that we would be giving the public proper service unless we went into thoroughly all of the matters intrusted to our hands which we were able to carry to a conclusion. We have sufficient work to keep 20 persons busy for eight to ten hours daily. To handle this work we have six persons permanently in the executive offices and two temporary employees. The laboratories are also undermanned. I feel sure that by doubling our present office force and our office accommodations we could easily accomplish three to four times the amount of work which we can now finish.

Most respectfully submitted,

Marshall Langton Price,

Secretary.

VITAL STATISTICS, 1907.

STATISTICS is defined by Webster as "The science which has to do with the collection and classification of certain facts respecting the condition of the people in a State."

The origin of the term from the "State" indicates its real importance in the science of politics. Government may be said to originate as a science with statistics. The science of statistics begins, on the other hand, in the enumeration and study of certain particulars concerning the individuals constituting the population of a State. Such a study is known as a CENSUS.

Statistics involves the systematic study of various important forms of classified knowledge, but the most important of these is that branch known as VITAL STATISTICS.

Vital statistics is the most important of the statistical studies dealing with the resources of the State, as it concerns the State's most valuable asset, namely, its 'human living capital.

All capital possessed by the State (with the exception of real property), having intrinsic value, is directly dependent upon the population.

The proper study of vital statistics comprises three main elements:

1. *The birth rate.*
2. *The death rate.*
3. *The duration of life.*

The efforts of the public health board are consequently directed towards: First, increasing the birth rate; second, diminishing the death rate; third, increasing the duration of life, the latter consideration being most important from the sanitarian's standpoint.

While many statistical investigations may be made from the usual census inquiries, vital statistics form a class specialized in such degree that, in addition to the data obtained by the census, another class of data must be secured, viz., the data obtained by REGISTRATION.

Registration may be defined from the standpoint of vital statistics, as the written return under statutory requirement, by certain designated persons, to lawfully constituted officers, of facts concerning individuals whose relations to the State are of temporary or permanent special interest or importance.

The foundation of vital statistics lies in the registration of births and deaths, though other data registered under statutory requirement, such as divorces, marriages, diseases and physical and mental deficiencies, may also be included under the term.

The United States Census requirements for Registration States, as announced in the Twelfth Census of the United States, Vol. III, Part 1, Pa. XXXVIII, are:

> "* * * only those areas * * * where the deaths obtained from registration sources constituted 90 or more per cent. of the total (registration plus additions from enumerators); and the additions from the enumerators' returns did not exceed 20 per cent. of the number reported by them."

The returned mortality in Maryland probably now constitutes over 90 per cent. of the total deaths. The reported births probably fall under 80 per cent. of the actual births. Maryland statistics share, in this respect, the deficiency existing in practically all American States in the registration of births.

The total deaths registered in Maryland during 1907 were for the rural districts, 9,792; in Baltimore city, 11,190; making a total for the State of 20,982.

The total births reported for the same year from the rural districts were 9,344; for Baltimore city, 8,761; making a total for the State of 18,105, leaving an apparent deficiency in the population of the State of 2,877.

The figures for Maryland during 1906 were: Births, 18,908; deaths, 20,204—a deficit of 1,296. These figures show an increase in the deficit of 1,581, and a decrease in the birth registrations of 803.

The rates for births, deaths, increase or decrease in 1907, were all calculated from the estimated population for 1907; the actual figures of population being only available for the census years. All estimates are drawn from the last census year, 1900.

In the following method, the population for the inter-census years is calculated by logarithms.

METHOD OF ESTIMATING POPULATION IN THE INTER-CENSUS YEARS.

To secure a more accurate estimate of population in the inter-census years than that recommended by the U. S. Census Bureau a *geometric* method of increase is used in place of the *arithmetic* method.

In the *arithmetic* method used by the Census Bureau the absolute increase for the ten years intervening between the two last censuses is divided by 10 and this number added to each succeeding year following after the last census.

In the *geometric* method the actual annual rate of increase is calculated for the ten years intervening between the last two censuses.

If $p =$ population of the census preceding the last and
$P =$ population of the last census we determine the rate of increase (n) by the following formula:

$$
\begin{array}{rl}
P = & \text{population at census ten years previous to last.} \\
P\,(n+1) = & \text{population one year later.} \\
P\,(n+1)^2 = & \text{population two years later.} \\
P\,(n+1)^3 = & \text{population three years later, etc.} \\
\text{And} \quad (n+1)^{10} = & \text{rate of increase for the ten years intervening between the last two censuses.}
\end{array}
$$

RATE OF INCREASE OF POPULATION OF MARYLAND.

For the ten years intervening between the last two censuses—1890-1900—the rate of increase was for:

Maryland	13.97%	Population 1900	$P = p \times 1.1397$	(A)
Baltimore	17.15%	" "	$P = p \times 1.1715$	(B)
Rural Districts	11.70%	" "	$P = p \times 1.1170$	(C)

To determine the annual increment (n) and population of inter-census year. (Logarithmic method.)

Rural Districts.

$$
\begin{array}{rll}
 & (n+1)^{10} = & 1.1170 \text{ (C)} \\
\log. & (n+1)^{10} = & \log.\ 1.1170 = 0.04805 \\
 & & 10)\ \underline{10.04805\text{–}10} \\
 & & \qquad 1.004805\text{–}1 \\
\log. & (n+1) = & 0.004805 \\
 & (n+1) = & 1.0112 \\
\text{Pop. } 1907 = & (n+1)^7 & \\
 & = & 0.004805 \\
 & & \underline{\qquad\quad 7} \\
\log. & (n+1)^7 = & 0.033635 \\
 & (n+1)^7 = & 1.080528 \\
 & \text{Pop. } 1907 = & P.\ 1.080528
\end{array}
$$

Baltimore.

$$
\begin{array}{rlll}
 & (n+1)^{10} = & 1.1715\ (B) & \\
\text{log.} & (n+1)^{10} = \text{log.}\ 1.1715 = & 0.068742 & \\
 & & 10)\ \underline{10.068742-10} & \\
 & & 1.006874-1 & \\
\text{log.} & (n+1) & = 0.006874 & \\
 & (n+1) & = 1.0160 & \\
\text{Pop. } 1907 = & (n+1)^{7} & & \\
 & & = 0.006874 & \\
 & & \underline{7} & \\
\text{log.} & (n+1)^{7} & = 0.048118 & \\
 & (n+1)^{7} & = 1.117167 & \\
 & \text{Pop. } 1907 = & \text{P. } 1.117167 &
\end{array}
$$

Maryland.

$$
\begin{array}{rlll}
 & (n+1)^{10} = & 1.1397\ (A) & \\
\text{log.} & (n+1)^{10} = \text{log.}\ 1.1397 = & 0.056792 & \\
 & & 10)\ \underline{10.056792-10} & \\
 & & 1.005679-1 & \\
\text{log.} & (n+1) & = 0.005679 & \\
 & (n+1) & = 1.0132 & \\
\text{Pop. } 1907 = & (n+1)^{7} & & \\
 & & = 0.005679 & \\
 & & \underline{7} & \\
\text{log.} & (n+1)^{7} & = 0.039753 & \\
 & (n+1)^{7} & = 1.095854 & \\
 & \text{Pop. } 1907 = & \text{P. } 1.095854 &
\end{array}
$$

ESTIMATED POPULATION OF MARYLAND, 1907.

The population of Maryland, estimated according to the method described (*vide supra*), is given in Table I for the male, female, white and colored population of Baltimore city, rural Maryland and the State of Maryland. The logarithms are included for the convenience of statisticians and others who wish to employ Maryland figures.

The estimated population, white and colored, for the counties, appears in Table II. The estimated population by ages, without distinction of sex or color, appears in Table XII.

TABLE I.

ESTIMATED POPULATION OF MARYLAND FOR 1907.

Maryland.	Population.	Logarithm.
Total population......	1,301,925	6.114585
White	1,043,781	6.018573
Colored	257,596	5.410939
Male	645,759	5.810071
Female	656,163	5.817012
Baltimore City.		
Total population......	555,646	5.754798
White	479,507	5.680796
Colored	89,104	4.949897
Rural Districts.		
Total population......	733,771	5.865561
White	565,338	5.752308
Colored	167,832	5.224876

	White.		Colored.	
Maryland.	Population.	Logarithm.	Population.	Logarithm.
Male	518,469	5.714723	127,290	5.104794
Female	525,248	5.720365	130,911	5.116989
Baltimore City.				
Male	232,087	5.365652	39,696	4.598749
Female	247,419	5.393434	49,386	4.693599
Rural Districts.				
Male	280,214	5.457490	87,115	4.940094
Female	278,596	5.444975	81,318	4.910188
LOGARITHMS $(n+1)^7$...				
Maryland	0.039753			
Baltimore	0.048118			
Rural Districts	0.033635			

BIRTHS IN MARYLAND.

The total number of births recorded in the State of Maryland during 1907 was 18,105, of which 9,344 were reported from the rural districts, and 8,761 from Baltimore city.

The total number of white births reported was 14,775. The total number of colored births reported was 3,330.

The total number of male births was 9,311; of female births, 8,794.

In Table II the births, deaths and increase are given by counties for the whole population, white and colored races; also the birth rate, death rate, and rate of increase per 1,000 of the population (estimated as given above from the United States Census figures for 1900). This table also gives the estimated population of the counties (total white and colored) for 1907.

TABLE II.

ESTIMATED POPULATION FOR THE COUNTIES OF MARYLAND, 1907.

COUNTIES.	WHITE.	COLORED.	TOTAL.
Allegany	56,208	1,803	58,011
Anne Arundel	26,188	11,660	37,848
Baltimore	85,494	12,553	98,047
Calvert	5,489	5,557	11,046
Caroline	12,976	4,578	17,554
Carroll	34,271	2,315	36,586
Cecil	22,529	4,111	26,640
Charles	8,659	10,401	19,060
Dorchester	19,963	10,247	30.210
Frederick	49,601	6,496	56,097
Garrett	18.990	136	19,126
Harford	24,215	6,325	30,540
Howard	13,300	4,759	18,059
Kent	12,253	8,041	20,294
Montgomery	22,040	10,863	32,903
Prince George's	19,352	12,950	32,302
Queen Anne's	12,956	6,885	19,841
Somerset	17,705	10,301	28,006
St. Mary's	9,635	8,921	18,556
Talbot	13,916	8,067	21,983
Washington	46,075	2,688	66,763
Wicomico	18,393	6,297	24,690
Worcester	15,118	7,424	22,542
Total for 23 counties	565,326	163,378	728,704
Baltimore City	479,507	88,543	568.050
Grand Total	1,044,833	251,921	1,296,754

TABLE II—*Continued.*

BIRTHS, DEATHS AND INCREASE OF POPULATION.

COUNTIES.	WHITE.			COLORED.			WHOLE POPULATION.		
	Births.	Deaths.	Increase or Decrease.	Births.	Deaths.	Increase or Decrease.	Births.	Deaths.	Increase or Decrease.
Allegany[1]	1269	663	+606	46	45	.....	1315	709	+606
Anne Arundel[2]	255	233	+22	120	232	—113	375	466	—91
Baltimore[3]	898	1510	—612	108	240	—37	1006	1755	—749
Calvert	125	64	+61	81	81	.....	206	145	+61
Caroline	86	154	+68	23	100	—77	109	254	—145
Carroll[4]	441	489	—48	24	48	—25	465	538	—73
Cecil	204	211	—7	23	60	—37	227	271	—44
Charles[5]	148	101	+47	183	168	+13	331	271	+60
Dorchester[6]	335	270	+65	142	228	—87	477	499	—22
Frederick[7]	554	597	—43	56	133	—78	610	731	—121
Garrett[8]	196	139	+57	4	2	+1	200	142	+58
Harford[9]	238	295	—57	35	96	—64	273	394	—121
Howard[10]	198	166	+32	66	93	—29	264	261	+3
Kent	100	143	—43	48	146	—98	148	289	—141
Montgomery[11]	379	219	+160	151	148	+2	530	368	+162
Prince George's[12]	416	273	+143	260	233	+26	676	507	+169
Queen Anne's	149	123	+26	67	121	—54	216	244	—28
Somerset[13]	253	139	+114	59	89	—31	312	229	+83
St. Mary's[14]	52	60	—8	13	47	—35	65	108	—43
Talbot	179	179	......	51	150	—99	230	329	—99
Washington[15]	841	615	+226	23	59	—37	864	675	+189
Wicomico[16]	221	220	+1	41	86	—46	262	307	—45
Worcester	110	168	—58	73	132	—59	183	300	—117
Baltimore City									
	7128	8378	—1250	1633	2812	--1179	8761	11190	--2429

---

[1] [2] [4] [7] [8] [11] [12] [13] [14] [15] [16] color not stated in one instance (deaths); [3] [6] color not stated in five instances; [5] [10] color not stated in two instances; [9] color not stated in three instances.

TABLE II—*Continued.*

Birth Rates, Death Rates and Rate of Increase, 1907.

Counties.	White.			Colored.			Whole Population.		
	Births per 1,000.	Deaths per 1,000.	Increase or Decrease per 1,000.	Births per 1,000.	Deaths per 1,000.	Increase or Decrease per 1,000.	Births per 1,000.	Deaths per 1,000.	Increase or Decrease per 1,000.
Allegany	22.57	11.79	+10.78	25.51	25.51	....	22.66	12.22	+10.44
Anne Arundel..	9.73	8.89	+0.84	10.29	19.98	—9.69	9.91	12.31	—2.40
Baltimore	10.50	17.66	—7.16	8.60	19.51	—10.91	10.26	17.89	—7.63
Calvert	22.73	11.64	+11.09	14.57	14.57	....	18.64	13.09	+5.55
Caroline	6.62	11.86	—5.24	5.02	21.84	—16.82	6.21	14.46	—8.25
Carroll	12.86	14.26	—1.40	10.36	21.16	—10.80	12.71	14.70	—1.99
Cecil	9.05	9.36	—0.31	5.59	14.59	—9.00	8.52	10.17	—1.65
Charles	17.09	20.90	—3.81	17.59	16.34	+1.25	17.36	14.21	+3.15
Dorchester	16.78	13.52	+3.26	13.85	22.34	—8.49	15.78	16.51	—0.73
Frederick	11.16	12.03	—0.87	8.60	20.61	—12.01	10.87	13.03	—2.16
Garrett	10.32	7.32	+3.00	29.41	22.05	+7.36	10.45	7.42	+3.03
Harford	9.81	12.18	—2.37	5.53	15.65	—10.12	8.93	12.90	—3.97
Howard	14.88	12.48	+2.40	13.86	19.96	—6.10	14.61	14.45	+0.16
Kent..........	8.16	11.67	—3.51	5.96	18.15	—12.19	7.29	14.24	—6.95
Montgomery ...	17.19	9.93	+7.26	13.90	13.71	+0.19	16.11	11.18	+4.93
Prince George's	21.49	14.11	+7.38	20.07	18.06	+2.01	20.92	15.69	+5.23
Queen Anne's..	11.50	9.49	+2.01	9.73	17.57	—7.84	10.88	12.29	—1.41
Somerset	14.28	7.85	+6.43	5.72	8.73	—3.01	11.14	8.17	+2.97
St. Mary's......	5.39	6.22	+0.83	1.45	5.38	—3.93	3.50	5.82	—2.32
Talbot	12.86	12.86	....	6.32	18.59	—12.27	10.46	14.96	—4.50
Washington ...	18.25	13.34	+4.91	8.55	22.32	—13.77	12.94	10.11	+2.83
Wicomico	12.01	11.96	+0.05	6.51	13.81	—7.30	10.61	12.43	—1.82
Worcester	7.27	11.11	—3.84	9.83	17.78	—7.95	8.11	13.30	—5.19
Baltimore City.	14.86	17.47	—2.61	18.44	31.75	—13.31	15.42	19.69	—4.27

By reference to that part of the table dealing with birth rates, death rates and rate of increase per thousand, on page 8, a comparison may be made of the efficiency of registration in the various counties of Maryland, and for this purpose a number of national and international birth and death rates are introduced. The total English birth rate, legitimate and illegitimate, averaged 32.6 per thousand of population in 1841 to 1850. In 1896 it was 29.7. The lowest birth rate in English counties in 1895 was, in Sussex, 24.3. In Part I, of Section 3, of the United States Census Report on Vital Statistics for 1901, Volume 3, the birth rate of the United States for ten years was calculated at 31.5. For England and Wales, 30.1; for Germany, 36.2; for France, 22.2, and for Switzerland, 27.7. The birth rates of the United States are generally acknowledged to be higher than most European countries. The national death rate per thousand, as calculated by Dr. Ogle in 1881, was: For England and Wales, 18.88; Austria, 18.82; Switzerland, 19.38; Germany, 19.21; Holland, 20.81; France, 21.31, and Italy 19.33. The general death rate for the United States during the ten years specified, was 17.4. The birth rate given by the United States Census for Maryland in 1890 was 26.0. It can be assumed for Maryland that a birth rate of under 20 indicates insufficient returns, and a birth rate of under 15 markedly defective returns, while a birth rate of below 10 indicates very bad returns. In classifying the counties according to this standard, we find two counties in 1907 which return a birth rate of over 20, namely, Allegany and Prince George's counties. Births from these counties can be classified as good. In the class of defective birth returns are Baltimore, Calvert, Carroll, Charles, Dorchester, Frederick, Garrett, Howard, Montgomery, Queen Anne, Somerset, Talbot, Washington, Wicomico, and Baltimore city, all of which give birth returns of over 10, but less than 20. Counties giving birth returns below 10 are Anne Arundel, Caroline, Cecil, Harford, Kent, St. Mary's and Worcester.

The death rates in Maryland counties should not fall below 17, though for the purpose of comparison a minimum of 15 may be adopted. Counties giving good returns on this classification are Baltimore, Dorchester, Prince George's and Baltimore city. Those giving defective returns (between 10 and 15) are Allegany, Anne Arundel, Calvert, Caroline, Carroll, Cecil, Charles, Frederick, Harford, Howard, Kent, Montgomery, Queen Anne's, Talbot, Washington, Wicomico, and Worcester. Counties giving death returns classified as very bad are Garrett, Somerset and St. Mary's. Returns from these counties have always been bad, and have given little evidence of improvement in recent years. In St. Mary's, birth and death rates both fall below 10. The largest excess of recorded births over deaths is in Allegany county, 10.44 (defective returns), and in Calvert, 5.55. A large number of the counties show excesses of deaths over births, the highest being Caroline county, —8.25. Excess of deaths over births in Baltimore city is —4.27. The highest excess of births over deaths in the white population is 11.09, in Calvert county, and the greatest deficit in the white population is —7.16, in Baltimore county. The maximum excess of births over deaths among the colored population occurs in Garrett county, +7.36. The greatest colored deficit in births is in Caroline county, —16.82.

Table III gives a summary of the births, birth rates, deaths, death rates and excess of births over deaths per thousand, among males, females, white and colored, for the rural districts, Baltimore and the State of Maryland.

It will be noticed in this table that both the birth and death rates are higher in the colored race. The death rate is proportionately so much higher that the apparent rate of increase is much less in the colored race than in the white.

The deficiencies in births are undoubtedly due to incomplete and defective returns of births, as there is an evident natural increase in both the white and colored populations of Maryland, as shown by the United States census table.

All birth returns may be assumed to be defective in which the total births do not exceed the total deaths, excepting under unusual circumstances.

The best method of computing the natural increase of population in any State, exclusive of the increase due to immigration, is the comparison of that portion of the population born in a State and living in its borders during a census year, with the same class of population in the succeeding census year. The variable factor in such a calculation will be interstate migration, but this factor will probably be fairly constant in Maryland.

In the census year 1890 there were 762,641 persons resident in Maryland who were born in the State.

In the census year 1900 there were 956,661 persons resident in Maryland who were born in the State. The increase in the number of native born in Maryland during the years 1890-1900 was therefore 193,976, or an increase for the ten years of a little over 25%, which probably represents fairly closely in Maryland the natural decennial increase, independent of immigration.

TABLE III

Births and Deaths in Maryland (1907), Summary.

Births.	Male.	Female.	White.	Colored.	Total
Rural Districts.....	4,855	4,489	7,647	1,697	9,344
Baltimore City.....	4,456	4,305	7,128	1,633	8,761
Maryland	9,311	8,794	14,775	3,330	18,105
Birth Rate.					
Rural Districts. ...	13.22	12.47	13.52	10.11	12.73
Baltimore City.....	16.39	14.50	14.86	18.33	15.76
Maryland	14.42	13.40	14.15	12.92	13.90
Deaths.					
Rural Districts.....	5,171	4,617[1]	7,031	2,737[2]	9,792
Baltimore City.....	5,851	5,339	8,378	2,812	11,190
Maryland	11,022	9,956	15,409	5,549	20,982
Death Rate.					
Rural Districts....	14.07	12.83	12.44	16.37	13.34
Baltimore City.....	21.52	17.99	17.47	31.56	20.14
Maryland	17.07	15.02	14.76	21.54	16.11
Excess of Births Over Deaths per 1,000					
Rural Districts.....	—0.85	—0.36	+1.08	—6.26	—0.61
Baltimore City.....	—5.13	—3.49	—2.61	—13.23	—4.38
Maryland	—2.65	—1.62	—0.61	—8.62	—2.21

(1)—In four instances sex not stated.
(2)—In twenty-four instances color not stated.

The succeeding tables (Tables IV and V) give births and still-births for the rural districts of Maryland.

From these districts there were registered in 1907, 9,999 births, of which 9,344 were living births and 655 still-births; a proportion of 6.55% of all births still-born.

In Table IV the male and female births are given by months, with the corresponding months of conception, dating nine months previously.

The greatest number of living births was recorded in January (890), the corresponding period of conception being the month of April.

During 1906 the maximum number of births occurred during the month of September (890).

The highest figures next in order were for the months of August (856), and September (855), corresponding to the months of conception of November and December.

During 1906 June furnished the minimum number of births. The minimum number of births during 1907 occurred in April (691).

The greatest number of male births occurred in January and September. The greatest number during 1906 occurred in September and March. The greatest number of female births occurred in August (439). In one month, August, the female exceeded the male births by 22.

Table VI (still-births) shows practically no seasonal variation, the fluctuation being proportionate only to the number of total births.

Births, male, female and total, appear in Chart 1, page 13.

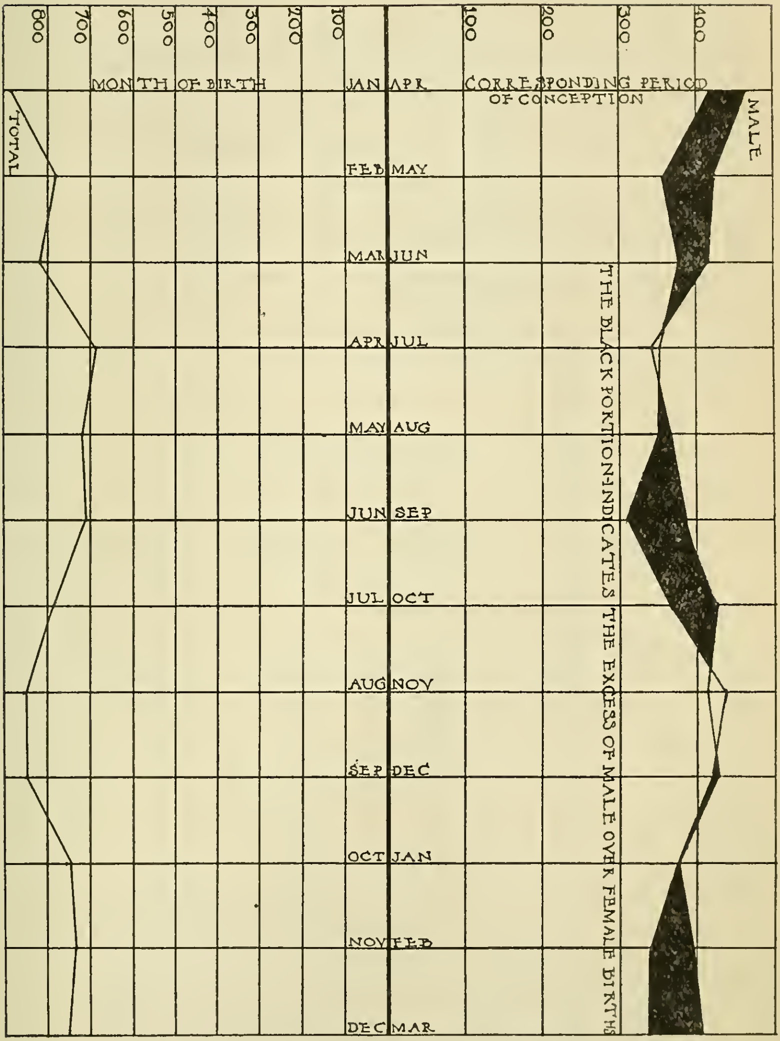

CHART 1. *Births by Months, Male, Female and Total. Rural Maryland,* 1907.

TABLE IV.

BIRTHS, MALE AND FEMALE, BY MONTHS—RURAL DISTRICTS, 1907

Month of Birth.	Corresponding Period of Conception.	Male.	Female.	Total.
January	April	466	424	890
February	May	426	358	784
March	June	418	397	815
April	July	341	350	691
May	August	368	353	721
June	September	387	317	704
July	October	426	367	793
August	November	417	439	856
September	December	429	426	855
October	January	374	375	749
November	February	397	342	739
December	March	406	341	747
		4,855	4,489	9,344

TABLE V.—RURAL DISTRICTS.

Still-births 1907.	White Males.	White Females.	Total White.	Colored Males.	Colored Females.	Total Colored.	Total.
January	30	14	*44	8	9	17	‡61
February	22	10	32	9	2	11	43
March	14	16	30	15	12	27	‡57
April	23	14	37	9	10	19	56
May	19	21	†40	10	12	22	62
June	19	10	29	10	9	19	48
July	19	19	38	13	11	†24	62
August	20	13	†33	13	8	21	‡54
September	27	15	42	9	6	15	57
October	17	19	36	10	2	12	48
November	16	12	28	7	11	18	46
December	16	14	†30	12	10	22	52
Total	242	177	§424	125	102	‖228	¶655

Total births, all classes	9,344
Still-births	655

Percentage of all births—still births, 6.55%.

*In two instances sex not stated.
†In one instance sex not stated.
‡In one instance color not stated.
§Total of whites, including five with sex not stated.
‖Total of colored, including one with sex not stated.
¶Total of all, with three color not stated.

The succeeding table (Table VI) gives illegitimate births by counties. These figures include mainly returns of white births, as owing to the peculiar marital relations of the colored race, it is difficult to establish a standard of legitimacy for children born of colored parents. Ecclesiastical marriages, as provided by Maryland statute, are not performed in a large proportion of colored persons who are living as man and wife. The highest proportion of illegitimates, according to these figures, was in Worcester county (54.63 per 1,000).

TABLE VI.

Illegitimate Births—Rural Districts, 1907.

Counties.	Number.	Total Births.	Illegitimates Per 1,000.
Allegany	16	1,315	12.16
Anne Arundel	2	375	5.33
Baltimore	8	1,006	7.95
Calvert	1	206	4.85
Caroline	....	109	*
Carroll	4	465	8.43
Cecil	2	227	8.81
Charles	3	331	9.00
Dorchester	10	477	20.90
Frederick	14	610	22.95
Garrett	1	200	5.00
Harford	....	273	*
Howard	1	264	3.78
Kent	1	148	6.75
Montgomery	12	530	22.75
Prince George's	5	676	7.39
Queen Anne's	1	216	4.62
Somerset	3	312	9.61
St. Mary's	....	65	*
Talbot	5	230	21.73
Washington	3	864	3.48
Wicomico	2	262	7.63
Worcester	10	183	54.63
	104	9,344	11.13

* No illegitimate births recorded.

The succeeding table (Table VII) gives figures of maximum fecundity in the rural districts during 1907. The table only gives figures of maximum fecundity, as those of mean fecundity are not available, but it may be of interest to consider the figures of European countries, giving the average number of births to a marriage: Italy, 5.15; England, 4.63; France, 3.42.

In the succeeding table only children in excess of the tenth during 1907 are considered. Of these there were 137 white and

TABLE VII.

Table of Maximum Fecundity—Number of Child in Excess of Tenth Born in Maryland, 1907—Rural Districts.

		11	12	13	14	15	16	17	18	19	20	21	Twins.	Total
Allegany	W	10	7	2	2	3	2						15 W	26
	C	1		1										2
Anne Arundel	W	1	2	2									4 W	5
	C	2		1		1	1						2 C.	5
Baltimore	W	14	6	2	2								9 W	24
	C	2		2	1		1							6
Calvert	W		2										1 W	2
	C		2	1									3 C.	3
Caroline	W	1												1
	C	1											1 C.	1
Carroll	W	2	2										4 W	4
	C	3	1										1 C.	4
Cecil	W	3		1									3 W	4
	C												2 C.	0
Charles	W	2	2										1 W	4
	C		1		1								1 C.	2
Dorchester	W		1		1								3 W	2
	C	2	2										3 C—III C	4
Frederick	W	3	5	2	2								7 W	12
	C	3											1 C.	3
Garrett	W		2		1		1						2 W	4
	C													0
Harford	W	2	2	1	1									6
	C	1	1		1								1 C.	3
Howard	W	1	4	2									2 W	7
	C	2		1	1								1 C.	4
Kent	W		1		1									2
	C	1	2	1	1								2 C.	5
Montgomery	W	3	3	1									4 W	7
	C	3	1	1									1 C.	5
Prince George's	W	4	1	2	2	1		1					1 W	11
	C	6	8	1								1	2 C.	16
Queen Anne's	W				1								1 W	1
	C	3	1	1				1						6
Somerset	W		1				1						4 W	2
	C	1											2 C.	1
St. Mary's	W												1 W	0
	C					1	1							2
Talbot	W	2	2										2 W	4
	C	1	2											3
Washington	W	8											9 W	8
	C	1		1										2
Wicomico	W				1								2 W	1
	C	1												1
Worcester	W												1 W	0
	C													0
White		56	43	15	14	4	4	1						137
Colored		34	21	11	5	2	3	1				1		78
Total		90	64	26	19	6	7	2				1		215

IIIc Triplets (colored.)

78 colored, a total of 215. The percentages of all births being: White, 1.79%; colored, 4.59%; total, 2.30%.

A twenty-first child was born of colored parents in Prince George's county, a seventeenth of white parents in Prince George's county, and a seventeenth of colored parents in Queen Anne's county.

In Table VIII the maximum age of fathers and mothers of children born in Maryland during 1907, and discrepancies in ages of parents are shown for the white and colored races by counties. This table considers A, maximum age of father; B, maximum age of mother; C, minimum age of father; D, minimum age of mother; E, greatest difference in ages (father older); F, greatest difference in ages (mother older).

TABLE VIII.

Table Showing the Maximum and Minimum Ages of Fathers and Mothers of Children Born in Maryland During 1907, Also Discrepancies in the Ages of Parents — White and Colored — Rural Districts.

EXPLANATION OF SYMBOLS.

A—Maximum age of father. B—Maximum age of mother. C—Minimum age of father. D—Minimum age of mother. E—Greatest difference in ages (father older). F—Greatest difference in ages (mother older). W—White. C—Colored.

Note.—The ages of the parents are returned in pairs, the age of father above the age of mother. The color is returned by W or C above each pair. The maximum and minimum and greatest difference in ages are returned by the symbols "A," "B," "C," etc., below each pair.

Allegany County.

Color.	W	W	W	W	W	W	W	W	W
Age of Father..	49	55	?	69	24	42	47	35	17
Age of Mother..	45	35	16	28	16	44	27	15	35
E 41 years...... F 18 years......	B		D	E A				D	F

ANNE ARUNDEL COUNTY.

Color.	C	W	W	W	C
Age of Father	19	60	22	46	70
Age of Mother	23	40	16	45	40
E 30 years	C		D		A E

BALTIMORE COUNTY.

Color.	W	C	W	W	W	W	W
Age of Father	46	?	66	48	28	55	19
Age of Mother	44	14	44	36	40	44	20
E 22 years F 12 years		D	A E		F	B	C

CALVERT COUNTY.

Color.	W	W	W	W	W
Age of Father	46	64	52	45	55
Age of Mother	23	34	29	42	42
E 30 years		A E		B	

CAROLINE COUNTY.

Color.	C	W
Age of Father	46	51
Age of Mother	35	43

CARROLL COUNTY.

Color.	W	W	W	W	W	W	C
Age of Father............	18	52	51	63	17	34	60
Age of Mother............	26	42	33	28	14	16	39
E 35 years............... F 8 years...............	F	B		A E	C D	D	

CECIL COUNTY.

Color.	W	C	W	W
Age of Father............................	45	51	70	?
Age of Mother............................	42	35	35	16
E 35 years...............................			A E	D

CHARLES COUNTY.

Color.	C	C	C	C	C	C	W	C
Age of Father.....	17	55	61	40	21	76	42	49
Age of Mother.....	15	50	40	14	15	35	49	19
E 41 years......... F 7 years..........	C D	B		D	D	A E	F	

DORCHESTER COUNTY.

Color.	W	W	C	W	C	W	W	C
Age of Father.....	18	54	?	71	54	49	17	30
Age of Mother.....	?	42	15	28	54	24	24	14
E 43 years .... F 7 years	C		D	A E	B		F	D

FREDERICK COUNTY.

Color.	C	W	C	W	W	W	C
Age of Father	22	72	44	52	62	22	50
Age of Mother	17	34	46	41	23	40	14
E 39 years F 18 years					E	F	

GARRETT COUNTY.

Color.	W	W
Age of Father	50	62
Age of Mother	30	38
E 24 years		E

HARFORD COUNTY.

Color.	W	W
Age of Father	48	56
Age of Mother	47	34
E 22 years	B	E

HOWARD COUNTY.

Color.	W	W	C
Age of Father	56	49	35
Age of Mother	40	47	43
E 16 years F 8 years	A E	B	F

Kent County.

Color.	C	W	W	W
Age of Father	56	28	60	?
Age of Mother	40	15	39	15
E 21 years	B	D	A E	D

Montgomery County.

Color.	C	W	C	C	W	W	W	C	W
Age of Father.	47	41	16	?	28	78	63	25	52
Age of Mother.	42	23	?	15	14	43	31	40	16
E 36 years...... F 15 years......			C	D	D	A B		F	E

Prince George's County.

Color.	C	W	W	C	C	C	C
Age of Father	40	60	47	58	70	19	35
Age of Mother	19	27	29	28	35	?	16
E 35 years		A		A	A E	C	D

Queen Anne's County.

Color.	C	W	C	W	W
Age of Father	64	47	20	?	46
Age of Mother	30	41	15	16	17
E 34 years	A E				

SOMERSET COUNTY.

Color.	W	W	W	W	W
Age of Father	28	50	52	67	58
Age of Mother	38	45	23	35	21
E 37 years F 10 years	F	B		A	E

ST. MARY'S COUNTY.

Color.	W	C	C
Age of Father	51	19	66
Age of Mother	43	17	29
E 37 years	B	C	A E

TALBOT COUNTY.

Color.	W	W	C	W
Age of Father	51	55	16	64
Age of Mother	30	19	17	40
E 36 years		E	C	A

WASHINGTON COUNTY.

Color.	C	W	W	W	W	W	W
Age of Father	17	46	35	41	23	57	60
Age of Mother	16	28	19	20	15	37	20
E 40 years	C				D		A E

WICOMICO COUNTY.

Color.	W	C	W	W
Age of Father	52	32	87	19
Age of Mother	29	18	33	16
E 54 years			A E	D

WORCESTER COUNTY.

Color.	C	C
Age of Father	?	50
Age of Mother	16	32
E 18 years	D	A E

SUMMARY.

Average Ages of Parents.

To determine the average age of parents, the number of parents of each sex having reached a given quinquennial period (15-20, 20-25, etc), at the time of the birth of the child, is multiplied by the median age (17.5, 22.5, etc.).

For mothers of 45 years or over, 50 is the factor employed. For fathers of 50 years or over the factor 55 is used.

Since the number of mothers reaching the age of 50 is small, while the number of fathers reaching an age in excess of 55 is large, the average age of the mother, as it appears in this table, will be somewhat too high. It will be noticed on reference to the preceding table that the maximum age of any mother was 54 years and only one other mother in the series reached the age of 50 years.

The result of the analysis of these figures appears below:

Average age of father	32.89
Average age of mother	28.22

According to the figures the father is 4.67 years older than the mother. If the figures for mothers above the age of 45 were corrected, the average difference would be approximately 4 years.

Maxima minima and difference of parents' ages:

Maximum age of father	87 years (mother 33, white).
Maximum age of mother	54 years (father 54, colored).
Minimum age of father	16 years (mother 17, colored).
Minimum age of mother	14 years (father 50, colored).
Greatest difference in ages	54 years (father 87, mother 33, white), (father older).
Greatest difference in ages	18 years (mother 35, father 17, white), (mother older).

The succeeding table (Table IX) gives the ages of fathers and mothers of children born in the rural districts of Maryland during 1907, without distinction of color.

TABLE IX.

Ages of Parents of Children Born in Rural Maryland, During 1907.

Age.	Father.		Mother	
	Number.	Per Cent.	Number.	Per Cent.
15–20	86	.92	839	8.97
20–25	1,365	14.60	2,412	25.81
25–30	2,203	23.50	2,277	24.36
30–35	2,007	21.37	1,698	18.03
35–40	1,566	15.79	1,155	12.36
40–45	904	9.67	481	5.14
45–50	495	5.29		
50 and over	295	3.14		
45 and over			67	0.71
Unknown	423	4.52	409	4.27
Total	9,344		9,344	

The above table may be used for comparative purposes in determining the age most favorable to fecundity in the male and female sexes, though it must be understood that such a table is only approximate even for comparative purposes, unless the figures for the age of married persons of both sexes are available. From this table it appears that the greatest number of fathers were at the age of 25 to 30 years (23.50%), and the greatest number of mothers at the age of 20 to 25 years (25.81%). The table illustrates, however, very plainly the superior fecundity of the female sex in early life and the persistence of fecundity in the male in advanced life. Thus only 0.92% of the fathers were under the age of 20, against 8.97% of the mothers, or a proportion of about 1 to 9, and of the mothers included in the percentage there were 7 at 15, and 6 at 14 years of age. At the other extreme, however, we find 8.43% of the fathers above the age of 45 and only 0.71% of the mothers, a proportion of about 1 to 12, and among this group there were 2 fathers of 70, 1 of 72, 1 of 78, and one of 87 years, while the maximum age of the mothers was only 54 years.

A brief reference may be made to the "*tables of natility*" of Korosi of Buda-Pesth. Stated *mono-sexually*, the maximum fecundity of the female in Buda-Pesth is reached between the 18th and 19th year. In the male the maximum fecundity is reached between the 25th and 26th year. In the following table the mean age of fathers and mothers of children born in Maryland during 1907 is stated (Table X, page 26):

TABLE X.

MEAN AGES OF PARENTS OF CHILDREN BORN IN RURAL MARYLAND DURING 1907.

Mean age of fathers	32.89 years
Mean age of mothers	28.22 years
Mean excess of father's age	4.67 years

TABLE XI.

PERCENTAGE OF NATIVE AND FOREIGN BORN PARENTS OF CHILDREN BORN IN THE COUNTIES OF MARYLAND DURING 1907.

COUNTIES.	PARENTS' NATIVITY.							
	NATIVE.				FOREIGN.			
	Both Maryland.	One Maryland.	Neither Maryland.	Total Natives.	Both Foreign.	Father Foreign.	Mother Foreign.	Total Foreign.
Allegany	45.02	25.70	17.71	88.43	5.09	3.42	2.96	10.47
Anne Arundel	72.80	12.80	5.33	90.93	4.80	2.13	2.13	9.06
Baltimore	69.08	15.20	6.46	90.74	4.07	2.87	2.28	9.22
Calvert	91.74	7.28	0.48	99.40	0.48	0.00	0.00	0.48
Caroline	67.88	21.01	5.50	94.39	2.75	1.83	1.90	6.48
Carroll	80.43	16.34	2.36	99.13	0.21	0.21	0.43	0.85
Cecil	54.18	32.15	9.69	96.02	1.76	0.88	1.32	3.96
Charles	90.03	6.64	2.11	98.78	0.00	0.63	0.63	1.26
Dorchester	86.16	11.11	1.25	98.52	0.62	0.41	0.00	1.03
Frederick	71.80	18.36	9.50	99.66	0.16	0.16	0.00	0.32
Garrett	51.00	34.00	15.00	100.00	0.00	0.00	0.00	0.00
Harford	79.85	14.65	3.29	97.79	0.73	0.36	1.09	2.18
Howard	77.65	12.50	5.68	95.83	0.37	2.65	1.13	4.15
Kent	85.81	12.16	0.00	97.97	2.02	0.00	0.00	2.02
Montgomery	68.67	19.43	10.18	98.28	0.75	0.56	0.37	1.68
Prince George's	67.45	16.27	10.27	94.99	0.88	0.88	1.31	3.07
Queen Anne's	83.79	13.88	1.38	99.05	0.92	0.00	0.00	0.92
Somerset	81.41	14.10	0.32	95.83	0.03	0.96	0.00	0.99
St. Mary's	81.26	3.50	2.08	86.84	0.00	0.00	0.00	0.00
Talbot	77.39	13.91	4.78	96.08	0.86	0.86	2.13	3.85
Washington	61.57	25.69	10.87	98.13	1.15	0.46	0.23	1.84
Wicomico	78.20	18.32	2.25	98.77	0.76	0.38	0.00	1.14
Worcester	74.26	21.31	3.27	98.84	0.54	0.00	0.54	1.08
Total	69.40	18.24	8.11	95.75	1.85	1.28	0.11	3.24

In the preceding table, number XI, the nationality of parents of children born in Maryland during 1907 is returned in six columns. In the sub-columns the native and foreign born parents are considered separately. In the column headed "Neither Maryland" the native parents are included, both of whom were born in the United States, but neither native of Maryland. The foreign column is in three sub-divisions, in the first of which are included parents, both of whom are of foreign birth; and second, father foreign; and third, mother foreign. By reference to this column it will be seen that the largest portion of native parents occurred in Garrett county, 100.00. The greatest portion of foreign parents was in Allegany county, 10.47, Baltimore county being next in order with 9.22. In 5 counties the proportion of native-born parents exceeded 99%, Calvert, Carroll, Frederick, Garrett and Queen Anne's. In Calvert county 91.74% of the parents of children born in 1907 were both natives of Maryland. In the rural districts at large there were 95.75% of the parents natives of the United States and 3.24% foreign-born. In Allegany county a large proportion of the percentage returned in total foreign were Anglo-Saxon, being natives of Wales, England and Scotland. The highest percentage of both parents foreign was in Allegany county, 5.09%, and the highest percentage of mothers foreign is also in Allegany county, 2.96%. In Allegany county 3.42% of the fathers were foreign-born. In the counties, excluding Baltimore city, 95.75% of the parents were born in the United States, while 3.24% were foreign-born, a showing which may compare favorably with nearly all American States.

DEATHS IN MARYLAND.

The total number of deaths recorded in Maryland during 1907 was 20,982; of these 9,792 occurred in the rural districts and 11,190 in Baltimore City.

The total number of white deaths was 14,775, of colored deaths, 3,330.

The total number of male deaths was 9,311, of female deaths, 8,794.

Table II gives the births, deaths and increase, and the birth rates, death rates and rate of increase (per 1,000) for the white and colored population of Maryland, estimated as shown on pages 3 and 4.

Table III gives the births, birth rates, deaths, death rates and excess of births over deaths per 1,000 of population for the male, female, white and colored, and total populations of the rural districts, Baltimore City, and the State of Maryland.

It would probably be advantageous to state the male and female death rates separately for the white and colored races, but the conditions shown in these figures would not be materially changed, viz., the superior vitality and longevity of the females of both races.

This table shows, in common with other tables giving death rates for the urban and rural districts, the adverse influence of city life.

Table III indicates another point in connection with city life, viz., that urban conditions fall with especial severity on the colored race.

TABLE XII.

DEATHS FOR THE YEAR 1907, BY AGES. SHOWING PERCENTAGES OF THE TOTAL MORTALITY FALLING IN THE SEVERAL PERIODS OF LIFE IN THE RURAL DISTRICTS, BALTIMORE CITY AND THE STATE OF MARYLAND.

AGES.	Rural Districts.		Baltimore City.		Maryland.	
	Deaths.	Per Cent.	Deaths.	Per Cent.	Deaths.	Per Cent.
0–1	2,115	21.60	2,423	21.65	4,538	21.63
1–5	725	7.40	910	8.13	1,635	7.79
5–10	236	2.41	206	1.84	442	2.11
10–15	180	1.84	150	1.34	330	1.57
15–20	330	3.37	288	2.57	618	2.95
20–25	435	4.44	1,002	8.95	1,793	8.55
25–30	356	3.64				
30–35	308	3.15	1,106	9.88	1,749	8.34
35–40	335	3.42				
40–45	305	3.10	1,130	10.09	1,772	8.44
45–50	337	3.44				
50–55	393	4.01	1,145	10.23	1,904	9.07
55–60	366	3.74				
60–65	539	5.50	1,275	11.39	2,485	11.84
65–70	671	6.85				
70–75	687	7.02	993	8.87	2,287	10.90
75–80	607	6.20				
80 and over	790	8.07	559	5.00	1,349	6.43
Unknown	77	.79	3	.03	80	.38
Total	9,792	99.99	11,190	99.97	20,982	100.00

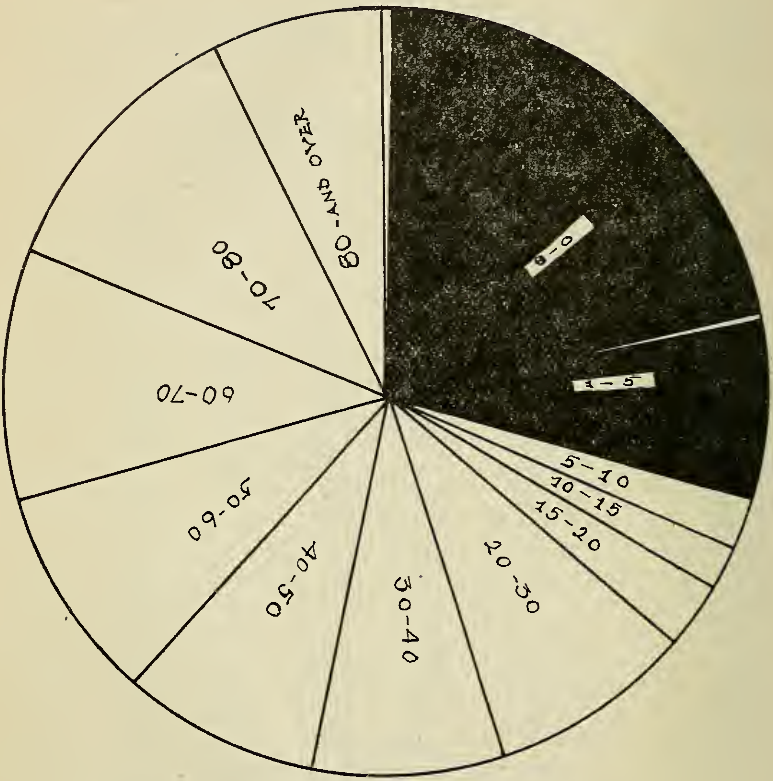

Chart 2. *State of Maryland. Deaths by Ages,* 1907.

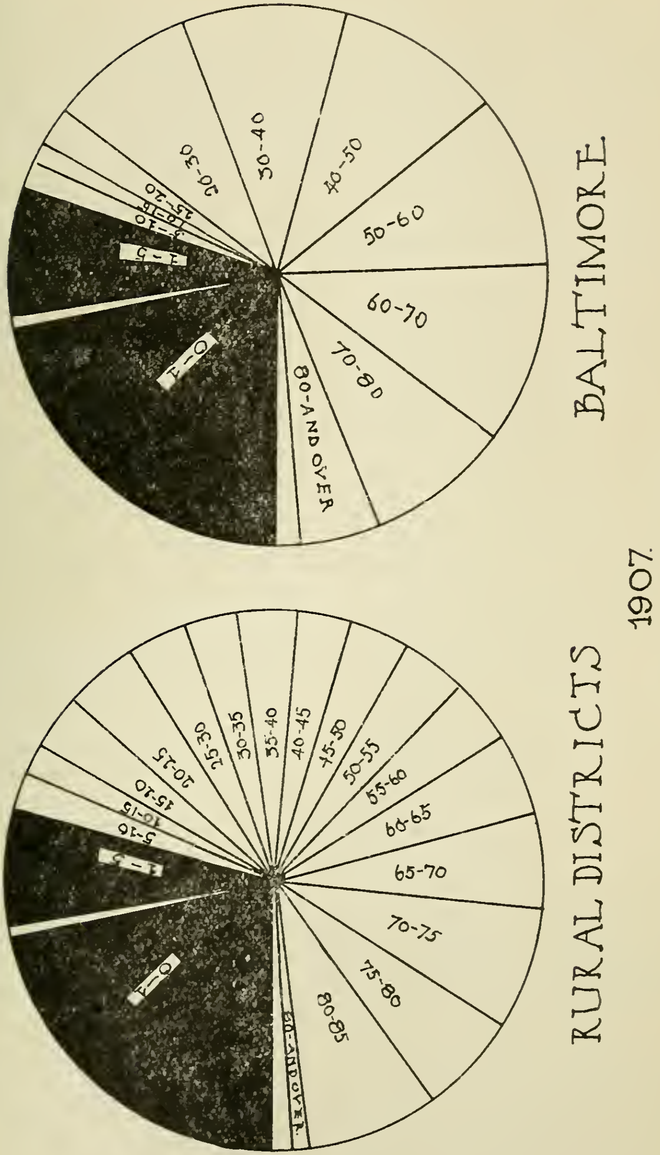

Chart 3. *Deaths by Ages.*

The preceding table (Table No. XII) gives the distribution of the deaths in the rural districts, Baltimore City and Maryland, according to age, giving the number of deaths at each age period and the percentages of total mortality. Chart No. 2 and Chart No. 3 show graphically the percentage of deaths at the several age periods; the charts indicate the excessive percentage of deaths in infancy (under 2 and under 5 years) and the large number of adult deaths at about the age of 70. The observation of the Psalmist in fixing the span of human life at threescore and ten years is, in a sense, correct at the present day, inasmuch as a larger number of adults die at this age than at any other age period. The table shows that the infantile mortality is slightly higher in Baltimore City than in the rural districts, as 21.65% of the deaths in Baltimore City occurred under the age of 2 years, and 21.60% in the rural districts. The figures under the age of 5 for Baltimore City are 29.78%, and the rural districts 29.00%. This difference is also to be noted in the accompanying charts. The number of deaths over the age of 80 years is considerably higher in the rural districts (8.07%) than in Baltimore City (5.00%). About three-quarters of the infantile mortality occurs in the first 2 years of life. This table does not show the actual mortality at the various age periods, as to determine this the number of persons living at each age period must be given.

Table XIII gives the estimated population and percentage living at each age period and the deaths and mortality for each age period.

The infant death rate shown in this table for the State of Maryland is 44.40 per 1,000. After 5 years of age the mortality falls to 3.04 per 1,000, at the next quinquennial period. The mortality rises slowly thereafter until it rises above the infant mortality after the age of 70 years. The mortality after the age of 80 is 215.15 per 1,000.

The lowest death rate is in the period between 10 and 15 years. The death rate per 10,000 at this age period for the past 4 years (1904, 1905, 1906 and 1907) was, respectively, 26, 25, 28 and 23.

TABLE XIII.

POPULATION AND DEATHS PER THOUSAND AT THE SEVERAL AGE-PERIODS—MARYLAND, 1907.

Maryland's Estimated Population (1907) 1,296,754.

AGES.	Per Cent.	Estimated Population.	Deaths.	Mortality per 1,000 of Those Living at the Age.
Under 5 years.........	11.36	147,311	6,541	44.40
5 to 10 years...........	11.21	145,366	442	3.04
10 to 15 years..........	10.66	138,234	330	2.39
15 t0 20 years..........	10.13	131,361	618	4.70
20 to 25 years..........	9.06	117,486	1,793	7.83
25 to 30 years..........	8.58	111,271		
30 to 35 years..........	7.17	92,977	1,749	9.73
35 to 40 years..........	6.68	86,623		
40 to 45 years..........	5.80	75,212	1,772	12.99
45 to 50 years..........	4.73	61,336		
50 to 55 years..........	4.07	52,778	1,904	20.51
55 to 60 years...	3.09	40,070		
60 to 65 years..........	2.57	33,327	2,485	43.85
65 to 70 years..........	1.80	23,342		
70 to 75 years..........	1.23	15,950	2,287	87.31
75 to 80 years..........	.79	10,244		
80 to 85 years..........	.33	4,279	1,349	215.15
85 to 90 years..........	.11	1,426		
90 to 95 years..........	.03	389		
95 to 100 years.........	.00	118		
100 and over...........	.00	58		

The percentages are from the U. S. Census figures for 1900.

The figures of this table are graphically shown in Chart 4. The profile of the black area, including the portion below, indicates the population; the number of deaths is shown in the black area described below. The population and deaths are shown for quinquennial periods up to the twentieth year; the deaths are shown thereafter in decennial periods.

It will be noted that after the twentieth year the absolute number of deaths remains somewhat the same, but the classes of the population from which they are drawn become progressively smaller, hence the mortality in the several age periods becomes progressively greater, increasing in a high geometric ratio in the later period of life.

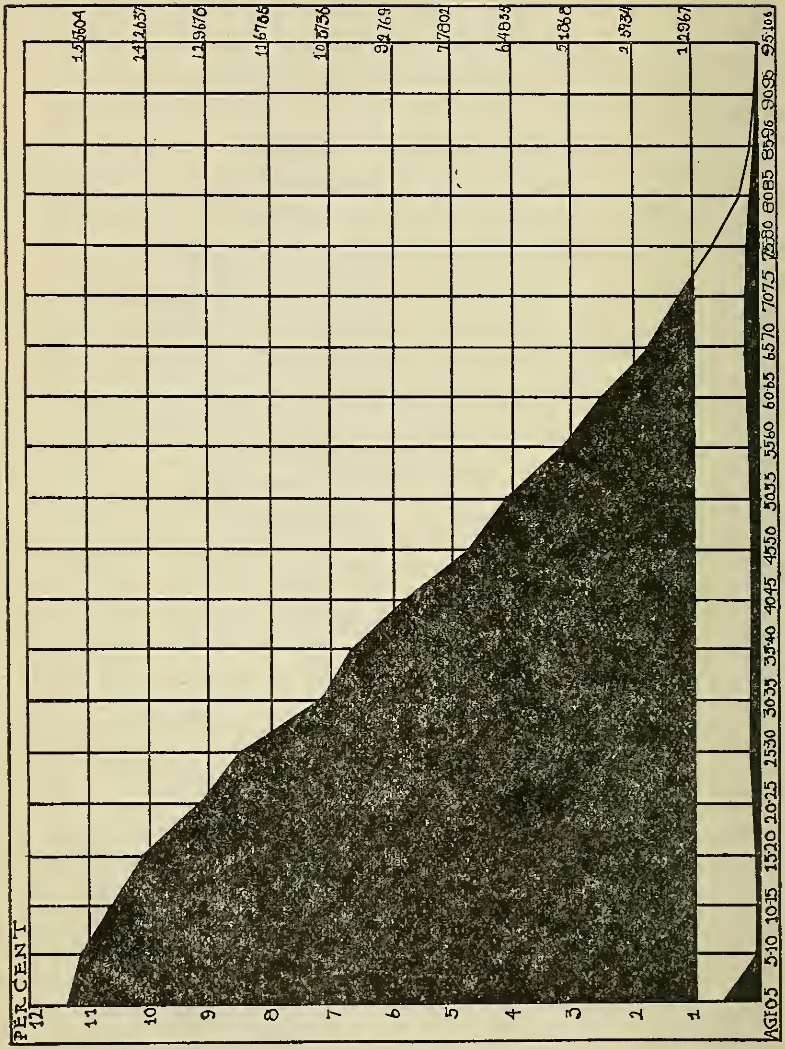

Chart 4. *Distribution of the Population and Deaths by Ages, Maryland,* 1907.

The diseases producing the general mortality analyzed in the preceding tables are shown in Tables A and B, at the end of the report, and in the special tables of this section.

It is evident from the sanitary point of view, that important differences exist in the nature of these diseases, in their relations to the public health, both as regards their infectiousness and the possibility of their prevention; accordingly the diseases have been classified in the table, from a strictly sanitary standpoint.

The following main divisions have been recognized—constitutional diseases, congenital diseases and malformations, poisonings and intoxications, malignant neoplasms, degenerations, pregnancy and violence; other obscure and inaccurately classified affections not properly falling in one of the previous classes.

The most important of these classes is that including parasitic diseases, which are mostly communicable, and are to a large extent within the power of sanitary control. All diseases of parasitic origin may be assumed to be communicable to a certain degree, although important differences exist as to the amount and extent of their contagiousness. Accordingly, these diseases are considered in three classes: (*a*) Infectious and contagious diseases; (*b*) communicable diseases; (*c*) other infections of parasitic origin.

The diseases classified under each heading are shown in Table XIV. Parasitic diseases form a class largely under the control of sanitary authorities. Poisonings and intoxications are to some extent controlled by law. Constitutional dyscrasiæ are not, as a rule, subject to administrative control, while congenital diseases and malformations are wholly beyond administrative influence. Deaths from violence are also usually outside the control of sanitary authorities. The diseases classified under degenerations and malignant neoplasms form a class of maladies which are imperfectly understood, and are accordingly not capable of control by our present methods. The comparative importance of these classes as causes of death is graphically shown in Chart 5.

TABLE XIV.

A CLASSIFICATION OF CAUSES OF DEATH, WITH THE NUMBERS OCCURRING, AND THEIR RATIOS TO THE MORTALITY. (MARYLAND, 1907.)

DISEASES.	Number.	Per Cent.
PARASITIC DISEASES.		
**Infectious and Contagious Diseases.*		
Typhoid fever, scarlatina, whooping-cough, diphtheria, influenza, cerebro-spinal meningitis (epidemic), small-pox, measles, glanders, anthrax, actinomycosis	1,453	6.93
* *Communicable Diseases.*		
Malaria, dysentery, tuberculosis, syphilis, tetanus, pneumonia, gonorrhœa, rabies, Addison's disease, erysipelas	4,211	20.07
† *Other Infections.*		
Septicæmia, pyemia, rheumatism (febrile), meningitis, bronchitis, broncho-pneumonia, gastro-intestinal inflammations (summer diarrhœa of infants), cholera nostras, tonsilitis, pharyngitis, cholecystitis (and other inflammations of the liver and gall-bladder), pericarditis, cystitis, peritonitis, acute nephritis, gangrene, abscess, furuncle, pleurisy, appendicitis, laryngitis, metritis, endometritis, endocarditis (acute)	3,675	17.52
CONSTITUTIONAL DYSCRASIAS.		
Diabetes, exophthalmic goitre, gout, anæmia, chlorosis, leukemia	248	1.18
CONGENITAL DISEASES AND MALFORMATIONS.		
Morbus ceruleus, icterus neonatorum, marasmus, sclerema	1,377	6.56
POISONINGS AND INTOXICATIONS.		
Alcoholism, saturnism and occupational intoxication, scorbutus	92	.44
MALIGNANT NEOPLASMS.		
Epithelioma, carcinoma, sarcoma	786	3.74

TABLE XIV.—*Continued.*

DISEASES.	Number.	Per Cent.
‡DEGENERATIONS.		
Cerebral congestion and hemorrhage, paralysis (without specified cause), meningo-encephalitis, cerebral softening (?), epilepsy, organic diseases of the heart, angina pectoris, arteriosclerosis, aneurism (and allied arterial degenerations), asthma (in all forms), hepatic cirrhosis, Bright's disease, senile debility and dementia, locomotor ataxia, myelitis, insanity, dropsy.............	5,525	26.33
PREGNANCY.		
Puerperal hemorrhage, puerperal septicæmia, puerperal albuminuria and convulsions, phlegmasia alba dolensa............................	178	0.85
VIOLENCE.		
Suicide, homicide, murder, duelling, accidental violence, poisoning, gas inhalation, drowning, strangulation and legal execution, death by insolation, lightning, freezing, burns and scalds..	1,132	5.40
INACCURATELY CLASSIFIED		
Encephalitis, hemorrhage, benign tumors, pulmonary congestion and apoplexy, and organic diseases of unspecified nature.....................	5	10.98
Total..................................	20,982	

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* All communicable diseases have been assumed to be due to a living organism, and included in this list whether specific living cause has been discovered or not.

† The distinction between these three classes is one of kind rather than degree, as all parasitic diseases may at some time be communicable.

‡ Includes mainly the disorders dependent on advanced years and prolonged strain.

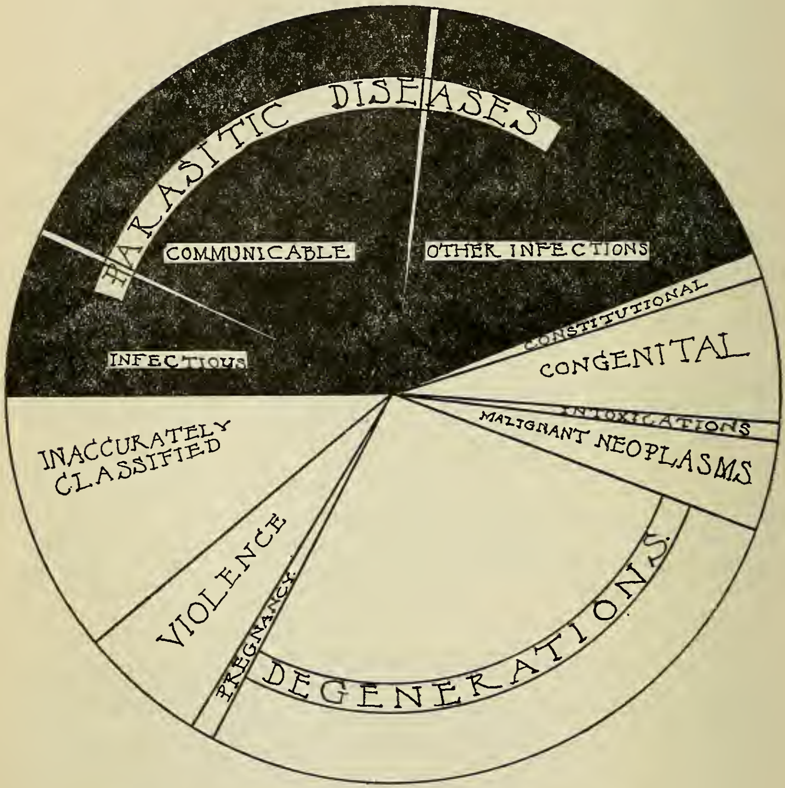


Chart 5. *Maryland Classification of Causes of Death*, 1907.

PRINCIPAL CAUSES OF DEATH

The principal causes of death are separately considered, as together they cause about seventy-five per cent. of the total mortality, and they are, in the main, preventable diseases.

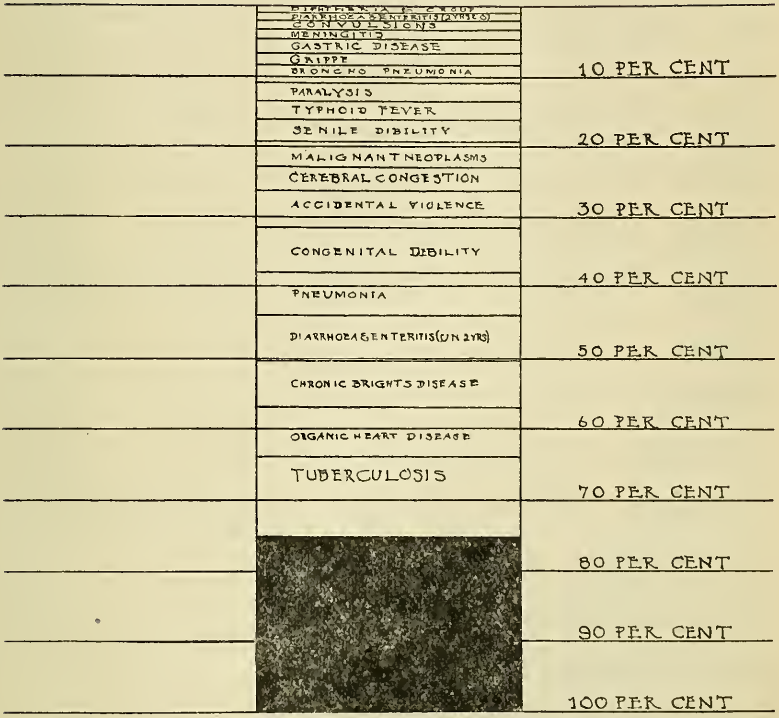
In Table XV the nineteen principal causes of death are tabulated, the table giving the number of deaths, the percentage of the total deaths, and the mortality per 10,000.

Nineteen principal causes are given instead of 20, as in the table in the report for 1906 and also for 1905, in order to include diphtheria, which appears at the foot of the table. Diphtheria has shown a conspicuous fall in its mortality during the past decade, due to improved sanitary conditions, the pre-eminent factor being the use of antitoxin for immunization and cure. The comparative mortality for these diseases is shown in Table XV, and in Charts 6, 7 and 8. Tuberculosis of the lungs and larynx ranks first, causing 11.09% of the total mortality, or a mortality of 17.97 per 10,000. The mortality during 1906 was 18.18 per 10,000. There has been a slight increase in the number of deaths reported as due to pneumonia, which was 5.94% of the total mortality in 1906 and 6.06% in 1907. The mortality per 10,000 has increased from 9.35 in 1906 to 9.82 in 1907. In the Maryland figures pneumonia ranks far below consumption as a cause of death, and there are no indications that pneumonia will in the future produce a mortality equal to consumption in Maryland, at any rate during the present decade.

TABLE XV.

Nineteen Principal Causes of Death in Maryland, 1907.

	Deaths.	Per Cent. of Total Mortality.	Mortality per 10,000.
1. Tuberculosis, Pulmonary and Laryngeal	2,330	11.09	17.97
2. Organic Heart Disease	1,468	6.99	11.32
3. Chronic Bright's Disease	1,421	6.77	10.96
4. Diarrhœa and Enteritis (under 2 years)	1,399	6.66	10.79
5. Pneumonia	1,273	6.06	9.82
6. Congenital Debility	1,250	6.05	9.64
7. Accidental Violence	1,117	5.32	8.61
8. Cerebral Congestion and Hemorrhage	788	3.76	6.15
9. Malignant Neoplasms	786	3.66	6.06
10. Senile Debility	658	3.13	5.07
11. Typhoid Fever	525	2.50	4.05
12. Paralysis	520	2.47	4.01
13. Broncho-pneumonia	514	2.44	3.96
14. Grippe	392	1.86	3.02
15. Gastric Diseases	383	1.82	2.95
16. Meningitis	285	1.35	2.19
17. Convulsions	282	1.34	2.17
18. Diarrhœa and Enteritis (2 years and over)	220	1.04	1.69
19. Diphtheria and Croup	198	0.94	1.53



TWENTY PRINCIPAL CAUSES OF DEATH
1907

Chart 6.

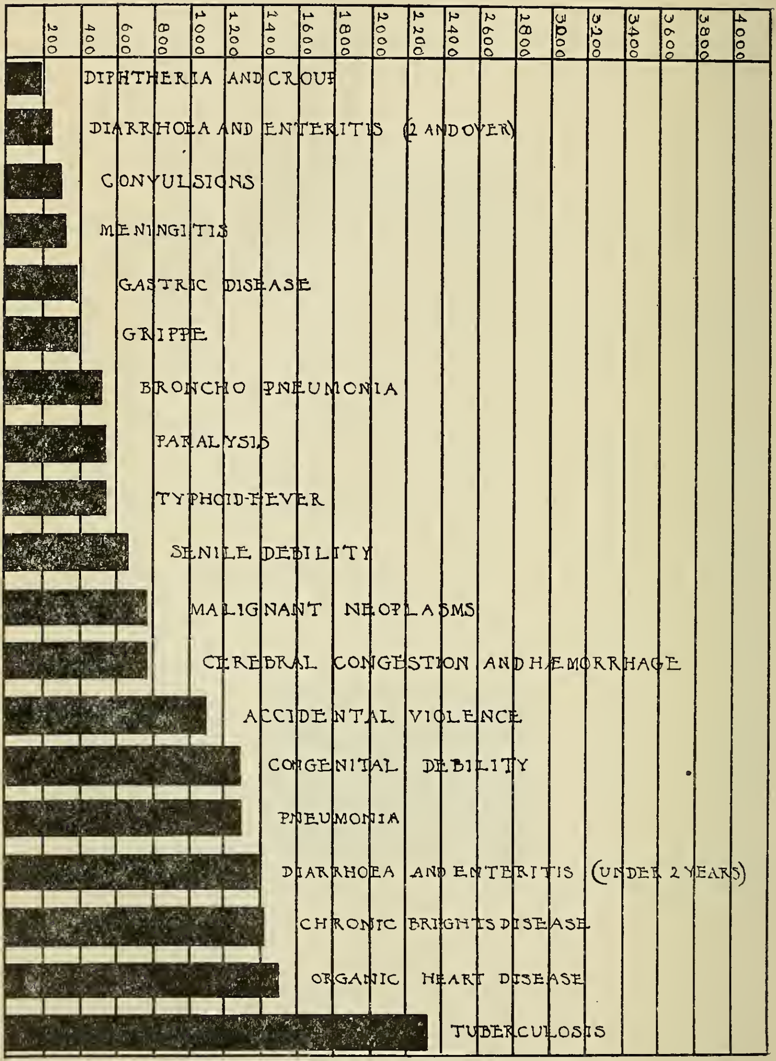


Chart 7. *Nineteen Principal Causes of Death,* 1907.

In Table XVI the principal diseases are divided according to the percentages occurring in the three periods of life already used (*vide supra*), with the exception of senile debility, congenital debility, infantile convulsions, unspecified and ill-defined causes, the three former of which fall by reason of their classification in only one period of life.

Deaths in the middle period of life have an importance from the economic standpoint far greater than those occurring in either extreme of life. In Chart 8 the principal causes of death are arranged according to their importance as causes of death, between the ages of 15 and 45 years, for the State of Maryland.

Tuberculosis of the lungs still easily retains first place on this chart. Typhoid fever, which ranks eleventh on the preceding chart, comes in third place with this arrangement; pneumonia falls to fourth place; accidental violence, which seems relatively unimportant in the preceding table, comes second in order of importance in the middle period of life. Heart disease ranks fifth and Bright's disease sixth, with this latter arrangement.

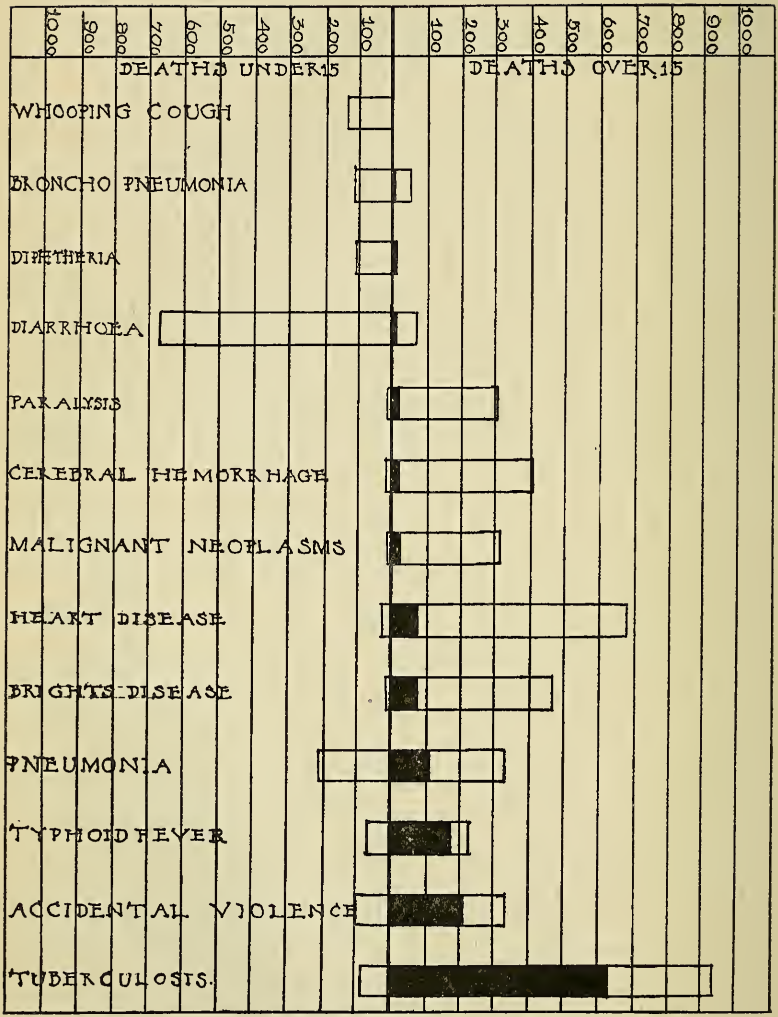


Chart 8. *Principal Causes of Death Classified According to Their Importance in the Middle Period of Life.*

AGE DISTRIBUTION OF PRINCIPAL DISEASES.

TABLE XVI.

DEATHS FROM FIFTEEN PRINCIPAL CAUSES IN MARYLAND (EXCLUSIVE OF BALTIMORE), 1907, SHOWING NUMBER AND PERCENTAGE OF DEATHS IN EACH OF THREE AGE PERIODS.

	Number.	Per Cent. in Each Period.
TYPHOID FEVER.		
Under 15	72	24.41
15 to 45	177	60.00
45 and over	46	15.59
	295	
PARALYSIS.		
Under 15	2	.67
15 to 45	20	6.60
45 and over	281	92.73
	303	
BRIGHT'S DISEASE.		
Under 15	11	2.23
15 to 45	87	17.65
45 and over	395	80.12
	493	
WHOOPING COUGH.		
Under 15	142	100.00
15 to 45	0	.00
45 and over	0	.00
	142	
HEART DISEASE.		
Under 15	31	4.35
15 to 45	99	13.88
45 and over	583	81.77
	713	
MALIGNANT NEOPLASMS.		
Under 15	1	.33
15 to 45	35	11.44
45 and over	270	88.23
	306	
DIPHTHERIA.		
Under 15	104	88.13
15 to 45	14	11.87
45 and over	0	.00
	118	

TABLE XVI.—Continued.

	Number.	Per Cent. in Each Period.
BRONCHO-PNEUMONIA.		
Under 15	109	68.55
15 to 45	6	3.78
45 and over	44	27.67
	159	
ACCIDENTAL VIOLENCE.		
Under 15	96	22.22
15 to 45	209	48.38
45 and over	127	29.40
	432	
TUBERCULOSIS (Lungs and Larynx).		
Under 15	81	8.00
15 and over	639	63.08
45 and over	293	28.92
	1,013	
PNEUMONIA.		
Under 15	203	38.02
15 to 45	105	19.66
45 and over	226	42.32
	534	
CEREBRAL HEMORRHAGE.		
Under 15	10	2.44
15 to 45	28	6.83
45 and over	372	90.73
	410	
DIARRHŒA AND ENTERITIS.		
Under 15	684	91.20
15 to 45	13	1.73
45 and over	53	7.07
	750	
OTHER CAUSES.		
Senile Debility (over 65)	376	....
Congenital Debility (under 3 months)	467	....
Infantile Convulsions (under 5)	114	....
Unspecified and ill-defined causes	503	....

The age distribution of the principal causes of death is shown in Charts Nos. 9, 10, 11, 12, 13. The age distribution of the general mortality is shown in Chart No. 9. These charts illustrate the age distribution of the principal causes of death, with the exception of senile debility, congenital debility, and infantile convulsions (whose age distribution is fixed by their classification) and the unclassified diseases. By referring to Chart No. 9 it will be seen that, as has been shown in previous charts, 29% of the general mortality occurs under the age of 5. The curve rapidly declines to the ages between 10 and 15 years, when the lowest actual mortality is reached. The actual number of deaths thereafter remains fairly uniform until after 60, when the number of deaths increases. A slight rise appears in the period of 20 to 25. This may be also noted in the corresponding chart for 1906, and it is probably more due to a defective return of ages at this period than to actual susceptibility of persons at this age. The general mortality ranges below 5% for all periods except the first quinquennium and the quinquennial periods after 60. *Pneumonia* has an age distribution corresponding closely to the age distribution of general mortality. If the pneumonia and broncho-pneumonia curves were combined, the analogy would appear even more striking. This fact shows that the term pneumonia, as generally employed, is a very generic one, and relates to a number of diseases, mostly infectious, of which pneumonia is the terminal or secondary symptom. Both pneumonia and broncho-pneumonia are important causes of death only at the extremes of life. After the age of 10 years broncho-pneumonia forms a small factor in the mortality, except for persons over 65, although it will be seen from the chart the very large proportion of deaths it causes in the first 5 years of life. *Broncho-pneumonia, diphtheria* and *whooping-cough* have an almost wholly infantile distribution. No deaths appear either in the chart for 1904 or 1905 after the age of 15 years. In the chart for 1906, 48 deaths from broncho-pneumonia, 18 from diphtheria and 2 from whooping-cough appear after the age of 15 years. Over 92% of the mortality from whooping-cough occurs in the first 5 years of life. In the chart for 1907, 50 deaths from broncho-pneumonia, 14 from diphtheria and none from whooping-cough appear after the age of 15 years. Over 95% of the mortality from whooping-cough occurs in the first 5 years of life.

Organic diseases of the heart, malignant neoplasms, cerebral hemorrhage, paralysis and *Bright's disease* occur almost entirely in the late periods of life. The mortality from cerebral hemorrhage rises above 5% at 45 to 50, and increases rapidly thereafter and reaches its fastigium at 70 to 75. Malignant neoplasms rises above 5% at from 45 to 50 years, organic heart disease at 50 to 55 years, paralysis 55 to 60 years and Bright's disease 50 to 55 years.

Tuberculosis—Tuberculosis is a disease of early adult life. It will be noted in the chart that the mortality reaches slightly under 3% from ages under 5 until the fifteenth year, when there is a rapid rise, the curve reaching its fastigium at 20 to 25 years, and declining more slowly until it passes below the 5% line at 55.

Typhoid Fever—Typhoid fever is a disease of early adult life. The curve also reaches its fastigium at 20 to 25 and declines still more rapidly until the fifty-fifth year, when it passes below the 5% line. After 55 years the mortality becomes very small.

The curve for *accidental violence* has two apices—one in the first quinquennial period, and the other for the fourth quinquennial period. That is, the periods of danger from accidental violence are infancy and adolesence. The causes of accidental violence in infancy are due to the inability of children to protect themselves and to the carelessness of parents. Burns and scalds account for a large portion of the mortality, and accidental drowning for a further considerable portion. A large number of these deaths are among the children of colored persons and foreigners, and are due on the one hand to the carelessness in handling fire, and on the other to the ready access to water afforded by the Maryland coast line and Chesapeake Bay and its tributaries. The use of gasoline for cooking and heating in Baltimore is responsible for many of the accidental deaths by burning. The high mortality at ages from 15 to 20 may be accounted for by the fact that a large number of young men commence their industrial careers at this age, and handle machinery before they have learned the necessity of care and the experience necessary to avoid accident. The percentages given on these charts are shown in the following table (Table No. XVII):

TABLE XVII.

AGE DISTRIBUTION OF MORTALITY FROM TWELVE DISEASES BY PERCENTAGES—RURAL DISRICTS—1907.

CAUSES OF DEATH.	0 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	80 and over.	Unknown.
Typhoid Fever	6.95	9.65	11.20	20.07	20.07	8.49	6.95	6.95	5.79	4.63	2.32	3.86	2.32	1.16	1.54	.77	.....	1.16
Whooping-Cough.....	95.07	2.11	2.11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.70
Tuberculosis (Pul.)...	3.00	2.20	2.90	9.00	15.40	13.40	10.80	8.90	5.60	6.00	5.60	3.10	4.20	3.60	2.50	2.30	1.00	.50
Pneumonia...........	32.77	2.99	2.24	2.62	3.37	3.37	2.62	3.98	3.73	2.06	3.37	4.87	5.06	4.87	6.74	7.49	7.11	.75
Broncho-Pneumonia..	66.04	1.88	.63	.....	1.88	1.25	.....	.....	.63	1.88	1.88	.63	.63	5.66	3.77	6.91	5.03	1.25
Organic Heart Disease	2.10	.84	1.40	.98	1.54	2.10	2.66	2.24	4.35	4.77	6.73	5.61	11.92	14.44	15.14	11.64	10.52	.98
Paralysis	.66	.....	.....	.33	.....	.....	.66	2.31	3.30	4.29	3.36	9.57	9.57	19.47	15.18	17.49	12.54	.66
Bright's Disease	2.03	.....	.20	2.03	3.65	1.42	2.23	3.85	4.46	3.45	6.89	9.94	12.98	14.40	14.60	10.75	6.89	.20
Accidental Violence..	12.50	5.09	4.63	10.18	11.34	8.56	6.94	6.25	5.09	3.70	3.24	3.70	3.24	3.01	3.70	1.16	4.86	2.78
Malignant Neoplasms.	.....	.....	.33	.....	1.63	1.31	.65	4.25	3.59	10.46	11.11	8.49	13.39	14.71	11.44	10.46	7.84	.33
Diphtheria...........	44.91	29.66	13.56	5.93	2.54	1.69	.85	.....	.85	.....	.....	.....	.....	.....	.....	.....	.....	....
Cerebral Hemorrhage	2.44	.....	.....	.49	1.22	.73	.98	1.22	2.20	5.37	7.80	8.05	10.49	17.56	14.88	13.17	12.44	.98
Deaths from all causes	29.00	2.41	1.84	3.37	4.44	3.64	3.15	3.42	3.11	3.44	4.01	3.74	5.50	6.85	7.02	6.20	8.07	.79

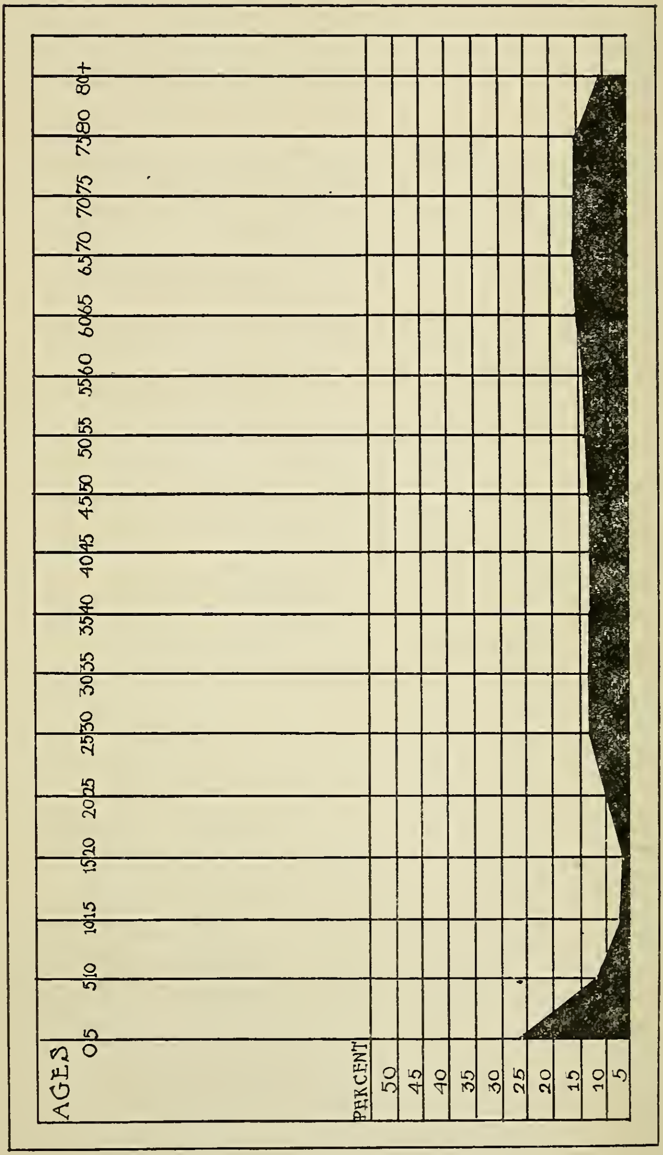
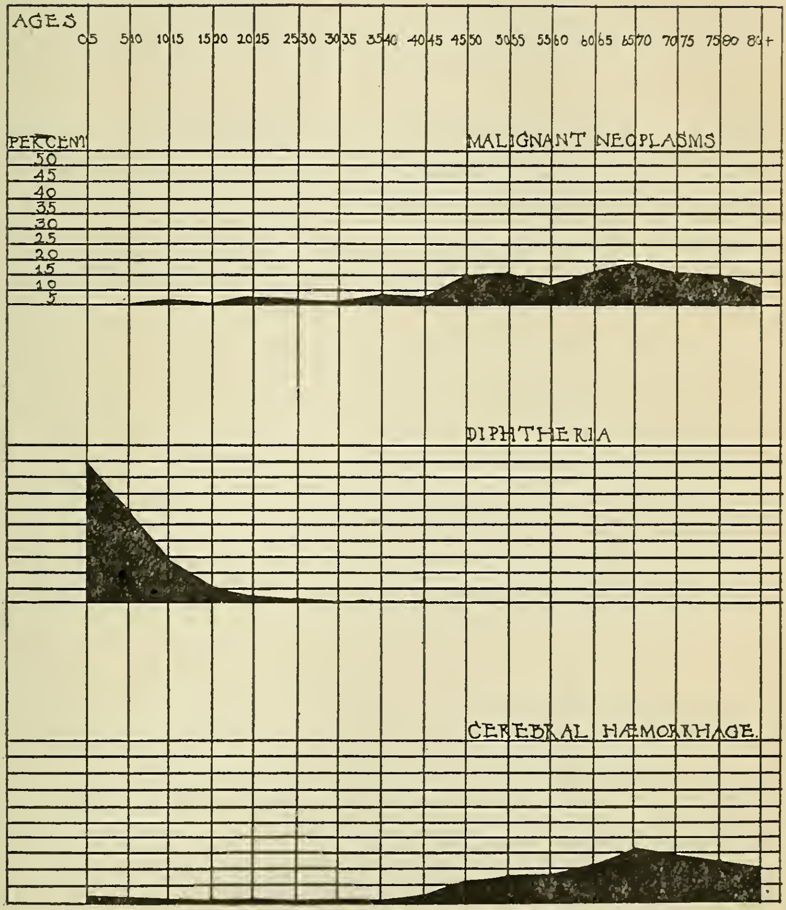


Chart 9. *Age Distribution of the General Mortality, Maryland, 1907.*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PERCENT
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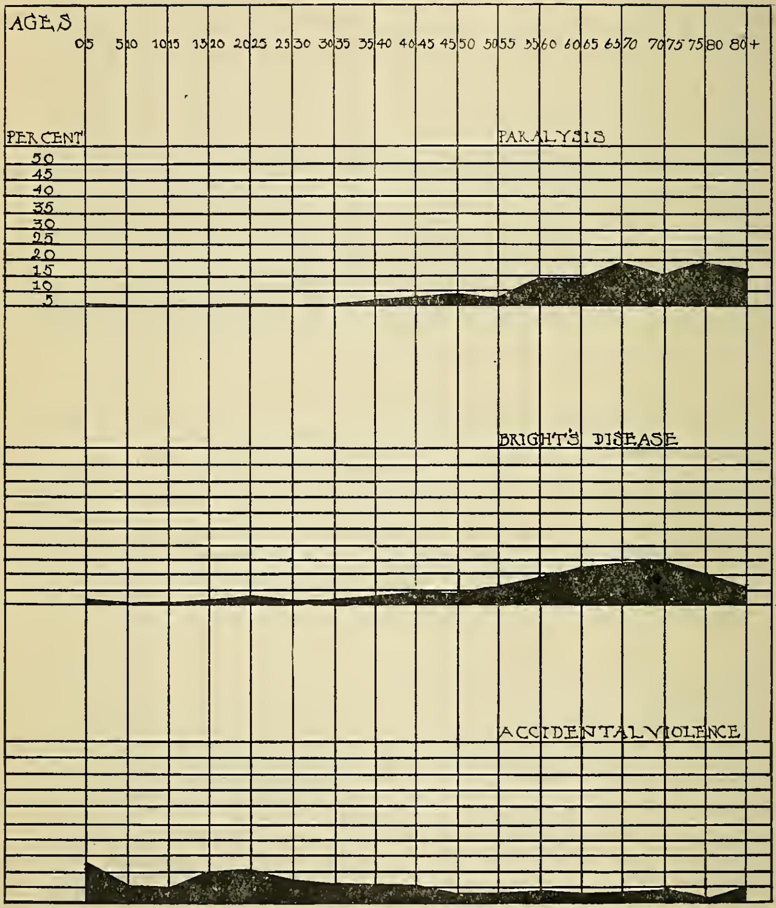
MALIGNANT NEOPLASMS
DIPHTHERIA
CEREBRAL HÆMORRHAGE.

Chart 10.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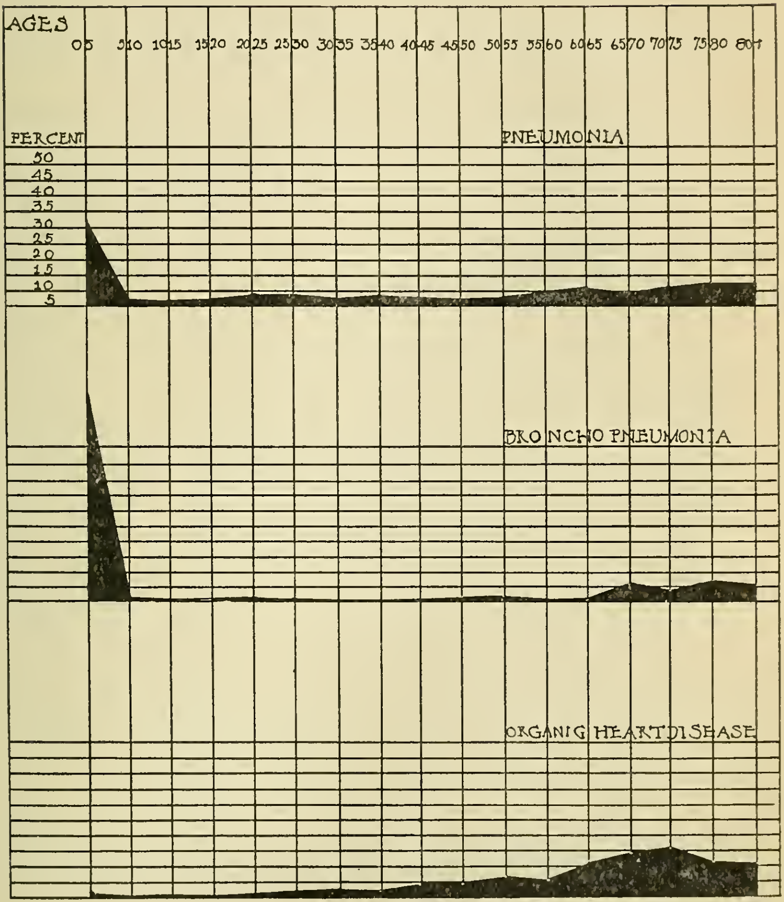
PARALYSIS
BRIGHT'S DISEASE
ACCIDENTAL VIOLENCE

Chart 11.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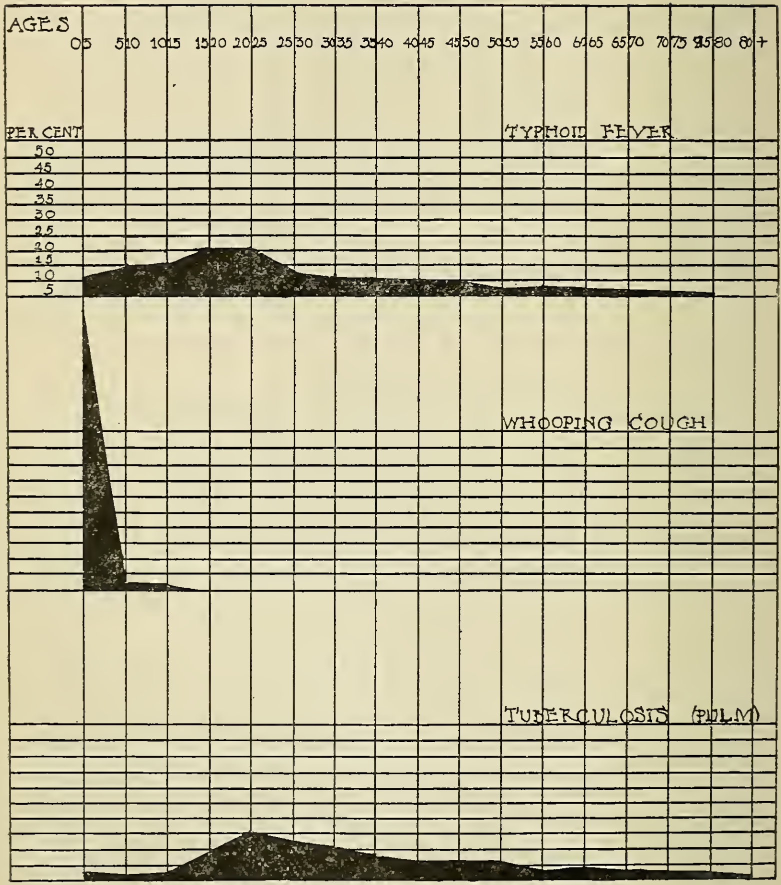
PNEUMONIA
BRONCHO PNEUMONIA
ORGANIC HEART DISEASE

Chart 12.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80 +
PER CENT
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5
TYPHOID FEVER
WHOOPING COUGH
TUBERCULOSIS (PULM)

Chart 13.

The following table (Table No. XVIII) gives the deaths from the five principal respiratory diseases in rural Maryland for the years 1900 to 1907, inclusive. The five diseases mentioned are *influenza, acute bronchitis, broncho-pneumonia, pneumonia* and *pulmonary tuberculosis.*

TABLE XVIII.

DEATHS FROM FIVE PRINCIPAL RESPIRATORY DISEASES IN RURAL MARYLAND, 1900-1907, INCLUSIVE.

DISEASES.	DEATHS.								PERCENTAGE OF TOTAL MORTALITY.							
	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.
Influenza	156	393	83	145	217	144	90	287	207	4.44	0.98	1.69	2.28	1.64	0.95	2.93
Acute Bronchitis	45	75	44	77	147	104	102	103	0.60	0.85	0.53	0.89	1.54	1.18	1.07	1.05
Broncho-Pneumonia.........	50	105	106	132	131	109	159	159	0.66	1.19	1.26	1.54	1.37	1.23	1.68	1.62
Pneumonia.......	436	652	537	562	662	532	527	534	5.79	7.36	6.36	6.50	6.94	6.04	5.57	5.45
Tuberculosis....	.....	1,044	1,064	1,075	1,286	1,115	1,005	1,000	.....	11.78	12.63	12.55	12.94	12.67	10.57	10.21
Total Deaths..	7,532	8,857	8,437	8,567	9,532	8,796	9,458	9,792	.....	.....	.....	.....	.....	.....	.....	.....

It will be seen by reference to the preceding table that the influenza figures have shown marked variations. The heaviest influenza mortality occurred in the year 1901, 393 deaths, or a proportionate mortality of 4.44%. In consonance with the epidemic mortality from influenza the pneumonia figures show a like elevation. The same is to be observed in the year 1904 and also in 1907, when a similar endemic of influenza appears to have prevailed in the rural districts. The variations in the figures of acute bronchitis are not of special interest, as the majority of these should either go in the pneumonia or influenza column. It will be noted particularly in influenza that each year of high mortality is followed by a year of low mortality, due, no doubt, to the elimination of the susceptible at the extremes of life. The broncho-pneumonia figures have shown a fairly steady increase up to 1905, in which both the figures for influenza and pneumonia are low. The figures for pulmonary tuberculosis also showed a decline in 1905, 1906 and 1907, after a slow but constant rise in the preceding four years. The association and interdependence of these diseases is shown on the accompanying chart (Chart No. 14). The exciting cause in determining the mortality from these diseases is probably influenza, which is highly contagious and always epidemic once or more annually. The correspondence between the influenza and pneumonia figures is especially striking. In the year 1904 all five of these show a simultaneous rise, and a simultaneous decline in 1905. With the exception of broncho-pneumonia, the same is true of 1906. In the year 1907 the influenza figures show a marked rise. The year 1904 registers the maximum for all five causes, excepting influenza, in which, although the mortality was high, it did not reach the epidemic figures of 1901. According to the Maryland records, the pneumonia mortality in the rural districts averages a little more than 50% of that from tuberculosis.

TABLE XIX.

Deaths from Tuberculosis, Rural Maryland.

	Male.	Female.
1902	497	574
1903	469	621
1904	585	709
1905	457	670
1906	484	535
1907	464	536
Average for 6 years	493	608
Median Population	359,772	346,355
Death Rate per 10,000	13.70	17.55

It would appear that tuberculosis, being a chronic disease, would not show any notable seasonal or annual variations, but it is evident from an examination of this chart, as well as those of seasonal mortality and the above table (Table No. XIX), that tuberculosis shows variations corresponding with the acute epidemic respiratory diseases. The reason for this is evidently to be found in the influence of the acute infections, especially pneumonia and influenza, in determining the death of tuberculous persons. Following years of influenza epidemics, the tuberculosis mortality should show a considerable decline, owing to the elimination of a considerable number of advanced consumptives. This appears to have occurred in 1905, but does not appear to have taken place after the high epidemic mortality from influenza in 1902. It can be easily understood that this fall need not necessarily take place at all, as it is well known that influenza not only determines death in tuberculosis many times, but that it may bring to an acute or advanced stage many consumptives who were previously in a chronic, non-progressive stage. The average for 6 years shows a gratifying decrease in the number of deaths from tuberculosis.

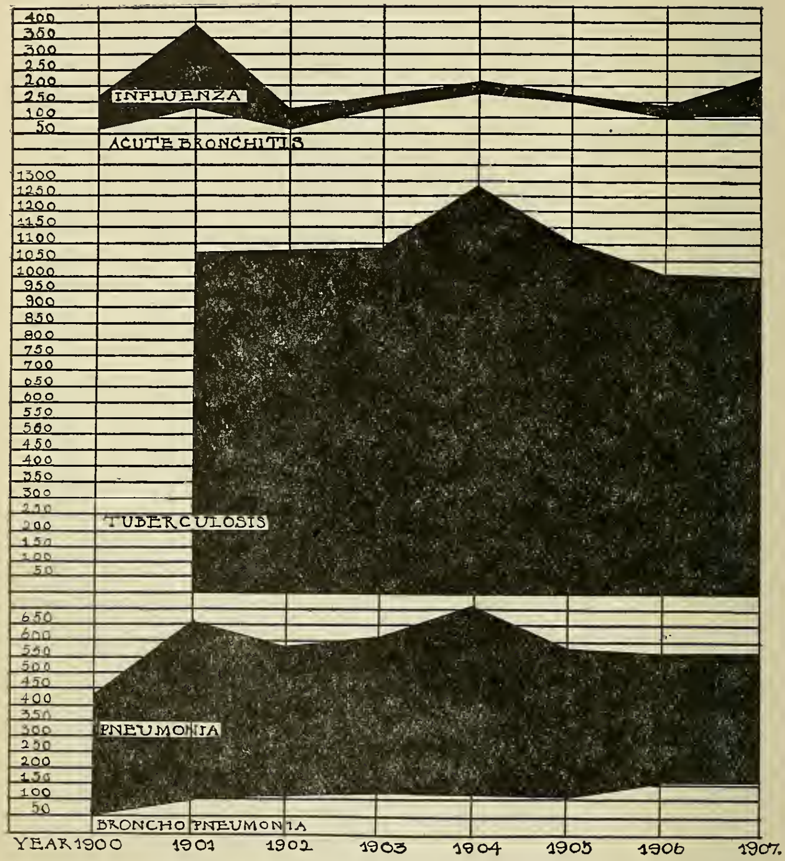


Chart 14. *Mortality from Five Respiratory Diseases,* 1900-1907.

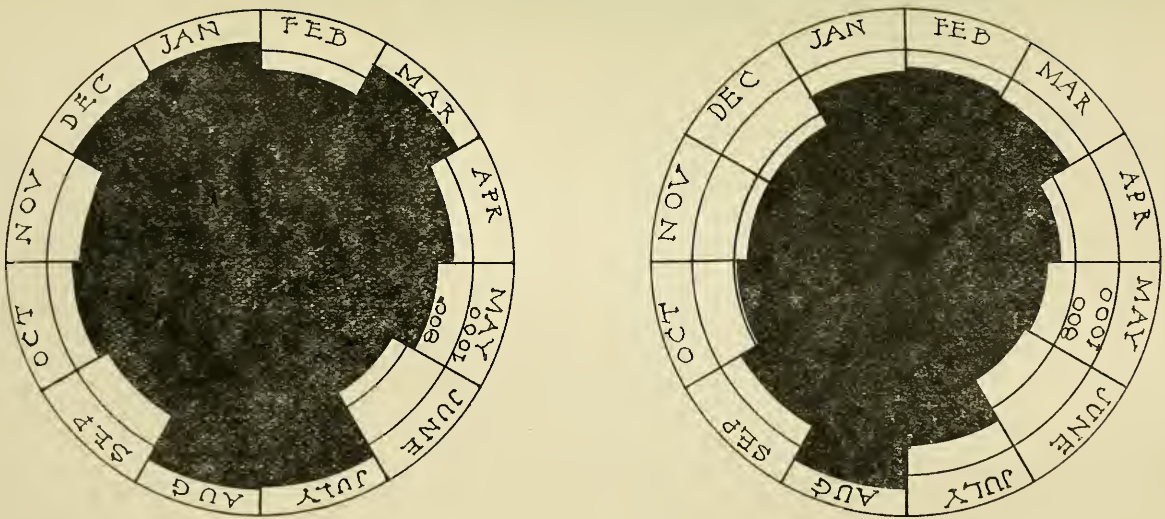
SEASONAL INCIDENCE OF THE MORTALITY.

The seasonal incidence of the general mortality is shown separately for Baltimore and the rural districts in Chart No. 15.

It will be seen that the monthly mortality, as shown in the black portion of the charts, is of somewhat oval shape, with the poles lying in the winter and summer months, which are the seasons of greatest mortality. Generally speaking, the mortality may be divided into two classes—diseases of the intestines, prevalent in the summer months, and diseases of the lungs, prevalent in the winter. The gastro-intestinal diseases reach their fastigium in the height of the summer. August is the month of greatest mortality in both the city and the rural districts. In the year 1906 June was the month of least mortality in Baltimore City and May in the rural districts. The expansion of the black portion of the chart during July and August is due almost entirely to the acute gastro-intestinal diseases of children and cholera infantum. The mortality during the winter months is due mainly to pneumonia and influenza. While the summer mortality affects mainly children, the winter mortality affects both extremes of life (infancy and old age). The sudden rise from the months of least mortality, May and June, to the months of greatest mortality, July and August, produces a very notable eccentricity in the figure. This is more marked in the city, where the mortality increases suddenly to its greatest height during the month of July. In the rural districts the rise in the mortality is somewhat slower, and the fall does not become marked until the end of August. The circles on the charts indicate the actual number of deaths in the two specified divisions of Maryland. While the populations of Baltimore and the rural districts are nearly equal, the mortality in Baltimore City is considerably higher, as appears in the chart. In the rural districts there are six months in which the number of deaths is less than 800, while in Baltimore City there is only one month, June, in which the number of deaths falls below 800. A comparison of this chart with that of the preceding year shows a marked correspondence in the general figures of the rural and urban districts. The figure of the chart is apparently not subject to many changes, although it may rotate somewhat, either to a later or an earlier season. In the winter months, March furnished the highest mortality in both

1905 and 1906. In 1907, February furnished the highest mortality for the rural districts and March for Baltimore City.

In the following table the deaths by months for five years, ending 1907, are given for Baltimore City and the rural districts (Table XX). From this table it appears that August is the month of greatest mortality in both the city and the country. June is the month of least mortality both in the rural districts and in Baltimore City.



BALTIMORE. RURAL DISTRICTS.

DEATHS BY MONTHS—MARYLAND 1907

Chart 15.

The seasonal prevalence of eight prominent causes of death are given in the succeeding chart, No. 16.

In considering seasonal prevalence, two classes of diseases must be recognized—

1. Acute fatal diseases, where the period of infection corresponds more or less closely with the period of death.

2. Chronic fatal diseases, where the date of death is separated by a long interval from the date of infection.

The influence of pneumonia and influenza upon the tuberculosis mortality will be seen at a glance at the chart. The chronic degenerative diseases, cerebral apoplexy, heart disease and Bright's disease, show little seasonal variation, and are apparently not much dependent upon acute infection. The pneumonia curve and influenza curve always correspond very closely. The gastro-intestinal diseases show a marked antithesis to pneumonia in their seasonal distribution. The mortality from acute gastro-intestinal infections show the greatest seasonal variation of any of these diseases, as already observed. To illustrate the striking influence of influenza and pneumonia upon tuberculosis, the curves of these diseases, together with those of acute bronchitis and broncho-pneumonia, have all been introduced in Chart No. 16.

TABLE XX.

	DEATHS BY MONTHS FOR 1907, 1906, 1905, 1904, 1903.											
	RURAL DISTRICTS.						BALTIMORE CITY.					
	1907.	1906.	1905.	1904.	1903.	Total for 5 years.	1907.	1906.	1905.	1904.	1903.	Total for 5 years.
January	898	739	744	853	800	4,034	1,041	906	852	962	1,030	4,791
February	914	819	763	909	771	4,176	923	890	883	1,023	862	4,581
March	890	855	845	982	782	4,354	1,075	991	958	1,076	902	5,002
April	745	698	684	816	655	3,598	917	909	893	898	805	4,422
May	670	659	619	733	700	3,381	826	866	787	869	753	4,101
June	641	695	633	677	614	3,260	722	738	878	754	707	3,799
July	861	950	891	883	848	4,433	1,058	1,079	1,162	1,071	1,097	9,266
August	1,066	899	822	971	734	4,492	1,068	865	874	921	860	4,588
September	887	738	740	727	662	3,754	832	816	813	804	707	3,972
October	795	813	691	672	654	3,625	884	933	822	773	776	4,188
November	712	795	667	664	618	3,456	839	822	901	795	756	8,301
December	713	798	697	645	729	3,582	1,005	930	860	872	886	4,553
Total	9,792	9,458	8,796	9,532	8,567	46,145	11,190	10,745	10,683	10,818	10,141	53,577

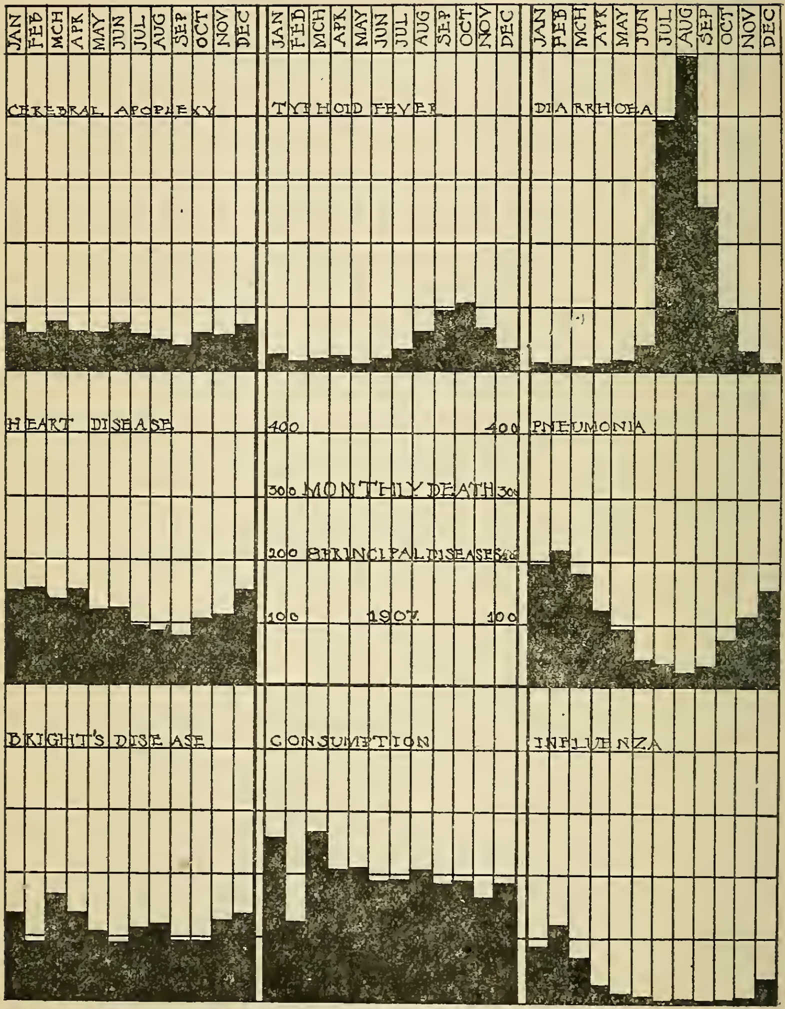

JAN
FEB
MCH
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
CEREBRAL APOPLEXY
TYPHOID FEVER
DIARRHOEA
HEART DISEASE
PNEUMONIA
400
400
300 MONTHLY DEATH 300
200 PRINCIPAL DISEASES 200
100 1907 100
BRIGHT'S DISEASE
CONSUMPTION
INFLUENZA

Chart 16.

INFECTIONS OF ORGANS.

The succeeding table and chart (Chart 17, Table XXI), show the comparative susceptibility of the several organs to infection. In general the table and charts have been arranged so as to show infections of the specific organ, and systemic infections, principally of the specified organ. The total number of deaths considered in this table is 9,463, or about one-half of the total mortality. Certain other important classes of diseases, such as degenerations, congenital diseases and accidents, are not considered in the tabulation.

It will be seen by reference to the table and chart that the mass of the inflammatory diseases affect the lungs and alimentary canal, infections of the lungs ranking very much higher than those of the other organs.

The special predilection of the tubercle bacillus for the lung has been previously recognized, but the fact that the majority of pathogenic organisms find in the lungs their most favorable habitat is not so well recognized. The organisms of the enteric group are, of course, an exception to this rule.

TABLE XXI.

PARASITIC DISEASES SHOWING THE ORGAN AFFECTED.

Respiratory Infections—		
Influenza, laryngeal and pulmonary tuberculosis, bronchitis, broncho-pneumonia, pneumonia, pleurisy, pulmonary abscess and gangrene	5,025	
Systemic Infections, Principally Respiratory—		
Measles, scarlet fever, whooping-cough, diphtheria	527	5,552
Infections of the Alimentary Tract—		
Typhoid fever, cholera, dysentery, abdominal tuberculosis, gastritis, enteritis, cholera infantum, peritonitis, appendicitis		2,371
Infections of the Urinary Tract—		
Perinephritis, pyonephrosis, pyelitis, cystitis, nephrolithiasis	42	
Systemic Infections, Principally of the Kidneys—		
Acute nephritis, other inflammations of the kidneys and their adnexa	204	246
Infections of the Nervous System—		
Rabies, meningeal tuberculosis, encephalitis, meningitis, tetanus, chorea		427
Systemic Infections, not Localized in any Organ or Tissue—		
Pyæmia and septicæmia, general tuberculosis, syphilis		202
Infections of the Skin—		
Erysipelas, gangrene, abscess and furuncle, dermatitis	103	
Systemic Infections, Principally of the Skin—		
Smallpox, scrofula	18	121
Arthritic Infections—		
Acute rheumatism	112	
Systemic Infections, Principally Arthritic—		
Chronic rheumatism, gout	33	145
Infections of the Female Organs of Reproduction—		
Endometritis, metritis, salpingitis, puerperal septicæmia		99
Infections of the Liver—		
Cholangitis, hepatitis, cholelithiasis		212
Infections of the Bones—		
Tuberculosis, osteomyelitis		58
Infections of the Blood—		
Malaria		30
Total		9,463

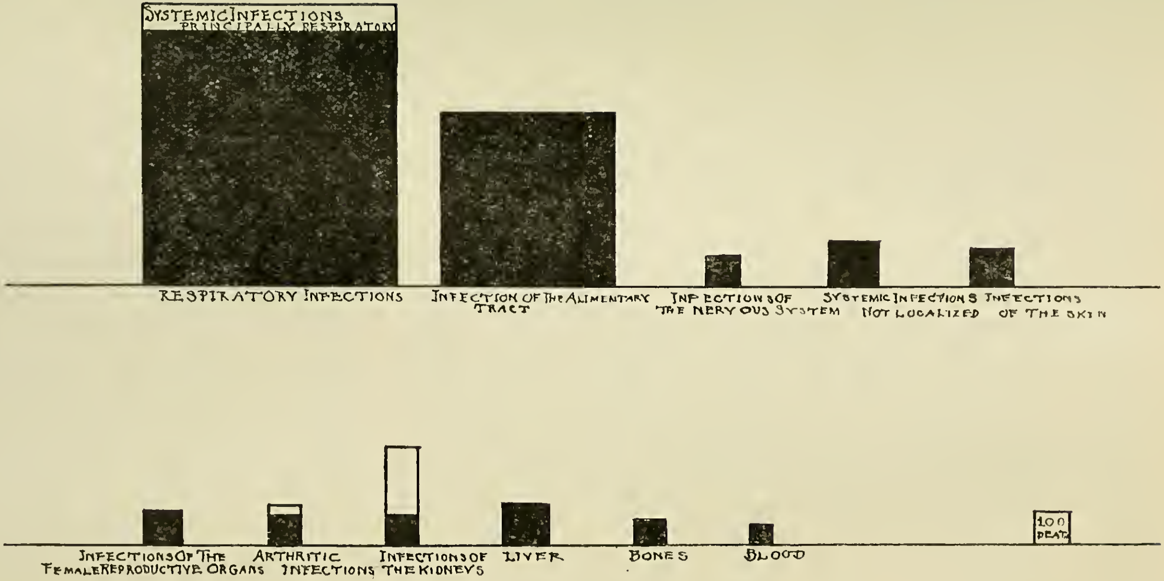


Chart 17. *Comparative Susceptibility of the Several Organs to Parasitic Infections. Maryland Mortality,* 1907

SPECIAL CAUSES OF DEATH.

Tables A, B and C, at the end of the report on Vital Statistics, give the causes of death, the number of each race and sex, the number dying in each county, the age at death, and the seasonal distribution of the mortality for the 179 principal causes of death recognized in the international classification.

Many of the diseases recognized in this classification are only important causes of mortality during epidemics, and are not commonly prevalent in this State. Others are limited to Europe, or the smaller geographical or climatic divisions.

Among the diseases of the Bertillon classification, from which there were no deaths in Maryland during 1907, were typhus fever, relapsing fever, miliary fever, Asiatic cholera, bubonic plague, yellow fever, leprosy, glanders and pellagra.

Small-Pox.—Deaths in Baltimore City, none. Deaths in the rural districts in Maryland, none. During 1905 there was one death from small-pox in the rural districts. During 1904 there were 9 deaths reported, 5 from the rural districts and 4 in Baltimore City. The one death of 1905 occurred in Calvert county. During 1906 there were no deaths from small-pox either in Baltimore City or in the rural districts.

Anthrax.—One death occurred in Baltimore City and one in Montgomery county. In 1906 there were no deaths from this cause in Maryland.

Rabies.—There were 2 deaths reported from hydrophobia in 1906. In 1904 there were 4 deaths in Baltimore City and 1 in Baltimore county. In 1905 there were no deaths from this cause. In 1907 there were no deaths from this cause.

Alcoholism.—Deaths in Baltimore City, 53; in the counties, 36—Total, 89. Deaths in the local option counties, 7. Baltimore City, with the same population, had almost double the number of deaths from alcoholism.

Occupational Poisonings.—One death occurred in Baltimore City from this cause and 2 in the rural districts.

Diffuse Meningo-Encephalitis and Other Forms of Insanity and Epilepsy.—From diffuse meningo-encephalitis, 34 deaths in the rural districts and 36 in Baltimore City. From other forms of insanity, 70 deaths in the rural districts and 7 in Baltimore City. From epilepsy, 35 deaths in the rural districts and 19 in Baltimore City. These deaths occurred mainly in the counties where the asylums are situated, the Baltimore City figures including deaths in Bayview Asylum.

Tetanus.—Deaths in the rural districts, 31; deaths in Baltimore City, 21—Total, 52. The greatest number of deaths in any county occurred in Baltimore county, 7; Charles county second in order, with 4 deaths; Allegany and Anne Arundel counties third, each with 3 deaths. During 1904 Anne Arundel county reported 8 deaths from tetanus. In 1905 Frederick county stood first, with 7 deaths; Anne Arundel county second, with 5 deaths. In 1906 Anne Arundel county stood first, with 5 deaths. The figures for tetanus in Anne Arundel county have been high for several years, and the great proportion were due to improper care of new-born infants. As shown by the figures for the rural districts, out of 31 deaths 19 occurred in the first year of life. Although this factor of the mortality is a small one, it is always easily preventable, and the painful and fatal nature of the disease should inspire the physicians in the infected districts to endeavor to have all possible precautions used for its prevention, especially to instruct the nurses having charge of the new-born in the simple and necessary measures of asepsis.

Intestinal Parasites.—Deaths in the rural districts, 4; in Baltimore City, none—Total, 4. The most common intestinal parasite causing death in the United States is the *uncinaria Americana.* Not more than a dozen cases of this disease have been reported in Maryland.

Pregnancy.—Deaths from this cause amounted to 0.85% of the total mortality. About one-half of this mortality is distinctly preventable, namely, nearly all forms of puerperal septicæmia, and most of the mortality from hemorrhage.

Suicide.—Deaths in the rural districts, 62; deaths in Baltimore City, 83—Total, 145. The most common form of suicide was by shooting, 49. The second most common cause was suicide by poisoning, 32; hanging ranks third, 30.

Accidental Violence.—Accidental violence caused 4.21% of the total mortality, against 4.42% in 1906. Among the special forms of violence, other than mechanical, accidental submersion ranks first, 155, and burns and scalds next, 134. Among the deaths from accidental violence Baltimore county furnished the highest proportion of the total mortality, 63 deaths, or 3.00% of the total mortality. Allegany county, with 47 deaths, ranks second. In the deaths between the ages of 15 and 60 in Baltimore county during 1907, 12.03% were from violence.

The third highest percentage of deaths from this cause was in Washington county, 1.14%. None of the other counties returned a proportionate mortality of more than 1%, the lowest being Caroline county, where no deaths due to this cause were reported in 1907.

Drowning.—There were 155 deaths from this cause in Maryland during 1907, against 151 during 1906 and 145 in 1905.

Electrical Shock.—Rural districts, 5; Baltimore City, 0—Total, 5. The deaths in the rural districts were as follows: Allegany county, 1; Dorchester county, 1; Frederick county, 2; Washington county, 1.—Total, 5. In 1906 there were 14 deaths from this cause—Rural districts, 13; Baltimore City, 1.

Unspecified and Undefined Causes.—The percentage of unknown and unspecified causes of death occurring in 1906 was 3.48%, and the percentage in 1905 was 3.53%. In 1907 the percentage of unknown and unspecified causes of death was 3.80%. This classification does not include the number of absolutely indefinite causes, such as hemorrhage, dropsy, sudden death and convulsions.

DURATION OF LIFE.

The third important element in the statistical consideration of the population is the duration of life. The main purpose in the organization of sanitary jurisdictions is to increase the duration of life, and the executive powers and functions of the jurisdiction should always be directed to this point.

The duration of life is usually shown statistically by tables illustrating the mean duration and expectancy of life of those living at given ages.

These tables were considered by Dr. Farr to represent the health and prosperity of the country, and to furnish a fair estimate of its living capital. Dr. Farr considered a table constructed in this way to be a measure of the *life* of the community, and hence it was called by him a *biometer*.

Other tables, popularly used by insurance companies, are tables of *survivorship* and tables showing the probability of living for a stated period at a given age—the *probability of living one year* being the factor generally employed in the construction of this class of tables.

The tables of duration of life are frequently graphically shown by a system of co-ordinates of age and duration, or age and expectancy. These graphic curves have great illustrative value in vital statistics, but tables and curves of duration of life are open to some objections for sanitary purposes.

From the method of construction of this class of tables only mean figures can be determined—the extremes of either great or brief duration of life are largely lost, and the eccentricities of the curve, which are of great sanitary importance, are not apparent.

All tables of duration of life are prognostic of the future, the conditions of life in any given year being assumed to remain constant during a future period of years, *i. e.*, 100 or 50 years. The particular problem which interests the sanitarian is, at what period of life does the mortality occur? His problem is directed in general to increasing the duration of life, and the results of the work will show in the small number of deaths in the early periods of life, and the increase in the number of deaths at an advanced age. This calculation is best stated in tables and charts of survivorship. Such tables and charts should illustrate in the population of the State, under sanitary conditions present in the year of calculation, the number of the population living and the number dead at succeeding age periods.

The "Average Age at Death" may be taken appropriately in connection with the duration of life. This factor is determined by adding the ages of the decedents and dividing them by the number of decedents. A short discussion of the real meaning of the average age at death is necessary in view of the fallacy, especially prevalent among a number of American statisticians, that an increase in the average age at death indicates necessarily a corresponding increase in the duration (expectancy) of life. It is evident that in many American communities such figures would be especially fallacious, as in many communities, made up of young adults and children, the average age at death will be low, while later, as the older portion of the population becomes numerous, the average age at death will be high, notwithstanding the fact that there may have been no change in the death rate. On the other hand, in a community with a definite, fixed, non-fluctuating population, the average age at death and the expectation of life at birth will be identical; because it is evident that all of such a living population will eventually become dead, and assuming no change in the conditions under which the population is living, and making observations for a sufficient number of years, we can determine the average length of time lived during this period by the deceased persons. It follows that the population living will die in the same proportion and at the same ages as the population dead (assuming the conditions to remain constant).

Thus, in 1907, there were 9,792 deaths in the rural districts of Maryland. Taking the sum of their ages, the 9,792 persons were found to have lived 366,020.825 years, giving an average age at death of 37.86 years. As before stated, this number should be identical with the duration of life in a fixed population, therefore the term *"presumptive duration of life"* may be applied to this factor in the succeeding table constructed as here described. The table of presumptive duration and presumptive expectancy is constructed as follows:

If we tabulate the decedents dying over the age of 5 years during 1907 we find 6,772 persons to have died, after living a total of 357,221,265 years, giving an average age at death of 52.75 years. This figure is entered in the table, under the heading, *"Presumptive Duration of Life."* Since this figure includes 5 years which have already been lived, the expectation of those decedent over 5 years will be at the age of 5 years 47.75 years. This factor appears in the table, under the heading *"Presumptive Expectation of Life."*

The factors of this calculation are shown in the first two columns of Table XXII, while in the last two columns, headed respectively "Presumptive Duration" and "Presumptive Expectancy," are given the presumptive expectation and duration of life by quinquennial age periods.

Method of Calculation.—To determine the total years lived by any number of decedents, the correct method is evidently to add the ages of all the decedents and divide the sum by the number of decedents. This method involves, however, a considerable amount of labor, and vital statisticians generally, who make this calculation, employ the median age between the two age periods, multiplied by the number of decedents during the same period.

By the aid of one of the standard adding machines it has been possible to take out the age of each individual of the 9,792 decedents of known ages in the rural districts of Maryland and to secure a very accurate result. The ages were returned by years and months, the months being entered as decimal fractions of a year.

All registrations in which the number of days of the age of the decedent was given were returned with an additional month (if over 15 days) and the additional days dropped if under 15.

Thus the maximum error of any individual entry was only 0.0416 years. In any large series of entries the error should not exceed 0.001.

The following decimals were used for months, each being carried to the third place—one month, .083; two months, .166; three months, .249; four months, .333; five months, .416; six months, .499; seven months, .583; eight months, .686; nine months, .749; ten months, .833; eleven months, .916; twelve months, 1,000.

By reference to Table XXII it will be seen that the presumptive duration of life steadily increases from the fifth year upwards, and the presumptive expectancy steadily diminishes.

The presumptive expectancy of life is greatest at 5 years, being greater then than at birth (47.75, as compared with 37.86). The expectancy at 10 and 15 years is also greater than at birth. At birth the expectancy and duration of life are identical.

While the table of presumptive expectation and duration of life is not to be relied upon as an accurate measure of real expectation of life, such as is furnished by actuarial tables, its simplicity of construction and value for purposes of comparison should make its use a necessity in all reports on vital statistics.

The figures over the age of 80 years are only included in the table for the interest they may possess, as they have no value for comparison, owing to the small number of entries and the marked annual fluctuation in deaths over 80.

TABLE XXII.

PRESUMPTIVE EXPECTATION AND DURATION OF LIFE, MARYLAND RURAL DISTRICTS, 1907.

DEATHS OVER THE AGE OF	Number.	Total Years Lived.	Presumptive Duration (Years.)	Presumptive Expectancy at Age.
5 years..........	6,772	357,221.265	52.750	47.750
10 years..........	6,551	355,654.480	54.290	44.290
15 years..........	6,375	353,449.538	55.451	40.451
20 years..........	6,042	347,697.050	57.547	37.541
25 years..........	5,615	338,298.071	60.249	35.249
30 years..........	5,276	329,174.241	62.391	32.391
35 years..........	4,969	319,322.903	64.263	29.263
40 years..........	4,631	306,853.306	66.261	26.261
45 years..........	4,313	293,663.226	68.088	23.088
50 years..........	3,986	278,397.214	69.844	19.844
55 years..........	3,599	258,359.010	71.786	16.786
60 years..........	3,212	236,512.125	73.634	13.634
65 years..........	2,690	204,105.755	75.503	10.503
70 years..........	2,039	160,363.685	78.648	8.648
75 years..........	1,373	112,349.846	81.835	6.835
80 years..........	777	66,392.107	86.733	6.733
85 years..........	351	31,489.643	89.713	4.713
90 years..........	120	11,260.878	93.840	3.840
95 years..........	38	3,739.571	98.409	3.409
100 years..........	11	1,134.663	103.151	3.151
BIRTHS...........	9,668	366,020.825	37.859	37.859

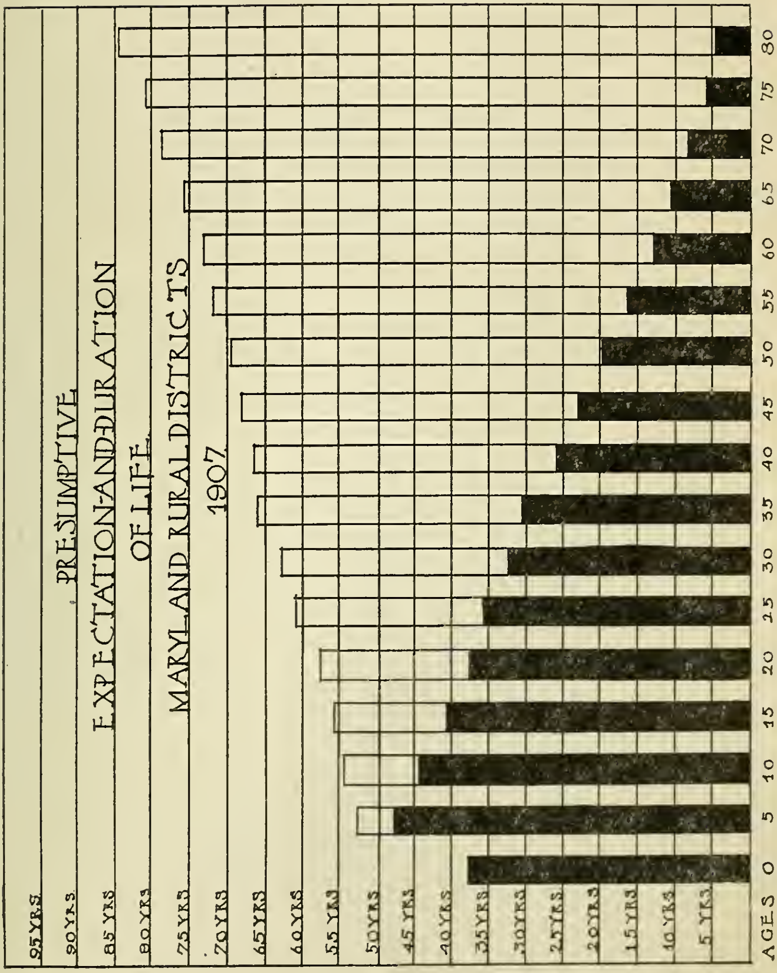

PRESUMPTIVE
EXPECTATION-AND-DURATION
OF LIFE
MARYLAND RURAL DISTRICTS
1907
95 YRS
90 YRS
85 YRS
80 YRS
75 YRS
70 YRS
65 YRS
60 YRS
55 YRS
50 YRS
45 YRS
40 YRS
35 YRS
30 YRS
25 YRS
20 YRS
15 YRS
10 YRS
5 YRS
AGES 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80

Chart 18.

The succeeding tables (Table XXIII and Table XXIV) give the average age of death by counties and by months, respectively.

The county giving the lowest average age at death in 1907 was Anne Arundel (30.709); the highest average of death was in Harford county (45.160).

In general, the thinly populated rural districts furnished a high average age at death, not only because of their more favorable sanitary condition, but because old persons form a larger part of the population of country districts. The populous districts always contain young people and children in numbers above the mean, and hence give a low average age at death.

An illusively favorable result may occur in some registration districts from defective returns. Unregistered deaths are more common in infants and children than in adults, hence the average age at death for these communities is high.

The next table (Table XXIV) gives the average age at death by months.

The analysis of this table gives very interesting results. The lowest average age at death is in August, the month of greatest mortality and *a fortiori* of infantile mortality. The average age at death in this month is 29.273. The next lowest average age at death is in September, 30.740. In the month of July there is a fractional rise, the July figures being 31.257. The rise in October is considerable; in November there is about an equal rise until the onset of winter in December, the average age at death dropping back to 36. In March the maximum is reached (44.130). It thus appears that the aged have as much cause as Cæsar Imperator to "Beware the Ides of March."

By reference to the table it will be seen that in three summer months (July, August and September), in one fall month (October), and in one winter month (December), the average age at death falls below the mean figure (37.859). In all the other months the figures are above the mean.

TABLE XXIII.

Mean Age at Death by Counties, Rural Districts, 1907.

Counties.	Total Deaths.	Total Age of Decedents.	Average Age at Death.
Allegany	708	23,971.697	33.858
Anne Arundel	461	14,156.161	30.709
Baltimore	1,712	64,613.534	37.742
Calvert	156	5,136.646	32.993
Caroline	254	8,450.788	33.310
Carroll	543	24,233.152	44,628
Cecil	268	11,756.700	43.868
Charles	263	8,241.816	31.338
Dorchester	491	16,037.203	32.662
Frederick	724	31,665.629	43.737
Garrett	139	5,273.055	37.936
Harford	392	17,702.810	45.160
Howard	256	10,009.602	39.100
Kent	281	10,398.785	37.006
Montgomery	363	14,054.740	38.718
Prince George's	502	16,816.233	33.498
Queen Anne's	241	8,522.727	35.778
Somerset	226	7,773.525	34.444
St. Mary's	109	4,214.909	38.668
Talbot	324	12,956.191	39.679
Washington	664	28,360.275	42.711
Wicomico	294	10,955.514	37.263
Worcester	297	10,719.133	36.091
Total	9,668	366,020.825	37.859

TABLE XXIV.

MEAN AGE AT DEATH BY MONTHS, RURAL DISTRICTS, 1907.

MONTHS.	Total Deaths.	Total Ages of Decedents.	Average Age at Death.
January	899	35,739.730	39.976
February	901	38,343.511	42.557
March	873	38,525.546	44.130
April	732	30,004.250	40.989
May	661	26,593.186	40.232
June	619	25,719.554	41.550
July	848	26,505.691	31.257
August	1,056	29,902.728	29.273
September	884	27,174.089	30.740
October	784	29,319.905	37.398
November	702	28,659.281	40.825
December	709	29,533.554	36.070
Total	9,668	366,020.825	37.859

MARYLAND BIOMETER.

The particular advantages, for sanitary purposes, of tables of survivorship over other forms of life tables have already, in part, been pointed out. If such tables are shown by the graphic method it is important for the sanitarian to note not only changes in the curve as a whole, but at what period such changes occur.

As already stated, life tables of expectancy tend to obscure important eccentricities in the life curve, by reason of compensatory curves occurring later in life.

This biometer is constructed on a table of survivorship, in which 10,000 persons born in a given year are traced throughout life, under the sanitary conditions of the year of computation, as indicated by the mortality returns.

If the death rates for the several age periods are determined for any given year, we may, by applying these rates to the estimated population of this year, construct a table of survivorship showing the number surviving at certain periods thereafter among those born in the given year.

Thus, of 10,000 persons born in Maryland during 1907, we have to determine the number surviving at the end of five years, of ten years, etc., providing the death rate of 1907 remains constant. A chart constructed from this table will indicate the sanitary condition of the State during the year 1907, and described in the manner presently to be mentioned, forms the "Maryland Biometer."

The Maryland biometer is shown in the chart in quinquennial periods for the year 1907, assuming the death rate of that year to remain constant. Instead of considering the whole population as a basis the scale is reduced to a population of 10,000 for the convenience of comparison with succeeding years. Thus, of a population of 10,000 born in Maryland during 1907, how many will be living and how many dead at the end of 5 years, of 10 years, etc.? This table and chart indicate survivorship and give both the number of living and dead at each quinquennial period after 1907.

Such charts readily admit of comparison with preceding or following years, as variations in the mortality at the various ages appear in the curve in their proper positions, and do not (as in the expectancy tables) merely modify the form of the curve.

The only factors necessary in the construction of this curve are the mortality rates for the several age periods (0-5, 5-10, etc.), which may be applied first to the original population of 10,000, then to the remaining population, after deducting the deaths from 0-5, etc. Applying the death rates obtained from Table XIII to 10,000 persons born in 1907, the survivorship at succeeding quinquennial periods is shown in Table XXVa. In Table XXVb, the survivorship with regard to color is shown.

TABLE XXVa.

Survivorship in Maryland, 1907.

Number of Survivors of 10,000 Persons Born in Maryland in 1907, at Succeeding Quinquennial Periods, Assuming the Death Rate of That Year to Remain Constant.

Number born in 1907	10,000
Number reaching the age of five years (A. D. 1912)	7,780
Number reaching the age of ten years (A. D. 1917)	7,662
Number reaching the age of fifteen years (A. D. 1922)	7,570
Number reaching the age of twenty years (A. D. 1927)	7,392
Number reaching the age of thirty years (A. D. 1937)	6,813
Number reaching the age of forty years (A. D. 1947)	6,150
Number reaching the age of fifty years (A. D. 1957)	5,351
Number reaching the age of sixty years (A. D. 1967)	4,254
Number reaching the age of seventy years (A. D. 1977)	2,389
Number reaching the age of eighty years (A. D. 1987)	313

TABLE XXVb.

Survivorship in Maryland, 1907.

Number of Persons Surviving of 10,000 *Persons Born in Maryland in* 1907, *at Succeeding Quinquennial Periods, Assuming the Death Rate of That Year to be Constant.*

	White.	Colored.
Number born in 1907	10,000	10,000
Number reaching the age of five years (A. D. 1912)	8,425	7,409
Number reaching the age of ten years (A. D. 1917)	8,342	7,245
Number reaching the age of fifteen years (A. D. 1922)	8,279	7,118
Nnmber reaching the age of twenty years (A. D. (1927)	8,161	6,853
Number reaching the age of thirty years (A. D. 1937)	7,644	5,891
Number reaching the age of forty years (A. D. 1947)	7,006	4,999
Number reaching the age of fifty years (A. D. 1957)	6,209	4,028
Number reaching the age of sixty years (A. D. 1967)	4,956	3,151
Number reaching the age of seventy years (A. D. 1977)	2,753	1,847
Number reaching the age of eighty years (A. D. 1987)	152	771

This biometer is graphically shown in Chart No. 19. It is evident that such a chart will indicate the life condition of the State, both in its form and in its area. To calculate the area it is only necessary to measure the length of the perpendiculars to the base line from each component point of the curve, and take the same measurement for the next succeeding point. The area of each trapezoid thus produced may be calculated in the usual manner, by taking the product of one-half the sum of its parallel sides by its altitude. The altitude in this case may be assumed for purposes of comparison to be unity. It is evident that the most favorable curve will be that with the highest and most nearly horizontal crest.

The comparison of the biometers of succeeding years shows a great degree of uniformity. The second biometer, which appears in Chart 20, has been constructed for the purpose of comparing the biometers of the four years, 1904-1907, inclusive. Color is also taken into consideration. The method of con-

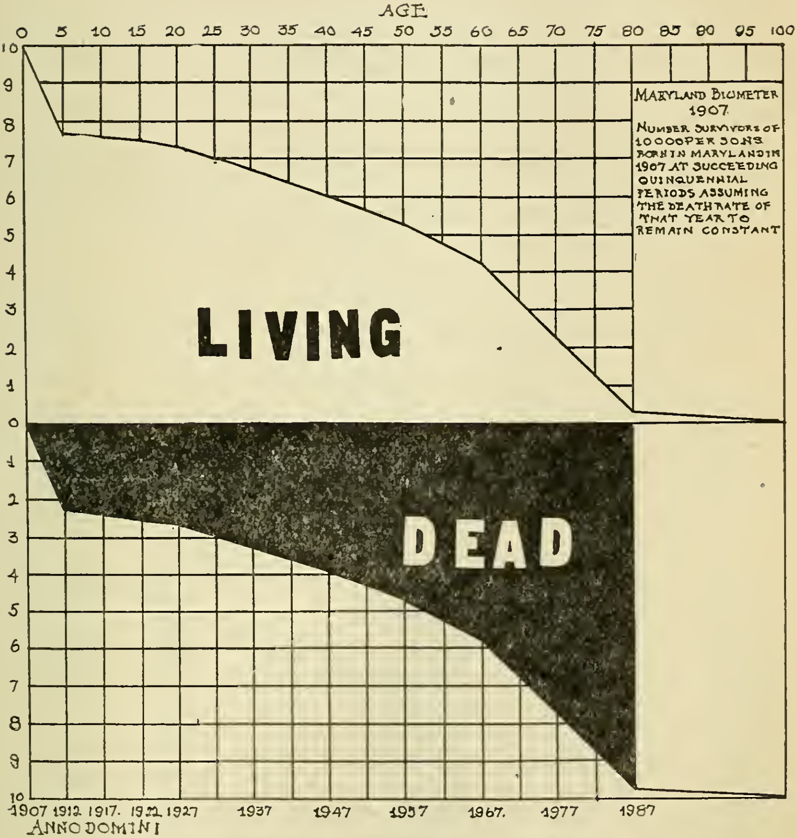


Chart 19. *Maryland Biometer.*

struction employed was first to produce a median biometer and to superimpose upon it the curves for the four years mentioned. In order to construct these curves it was necessary to first determine the figures for an estimated median population and the median deaths annually, and from these figures to determine the median annual mortality. The median mortality for the age period can then be determined by multiplying by five for the quinquennial periods, and by ten for decennial periods; these four columns appear in the accompanying Table, No. XXVIa. Table No. XXVIb has especial reference to the estimated white population of the State, while Table No. XXVIc deals in a similar manner with the estimated colored population of the State. The succeeding tables (Table No. XXVII and Table No. XXVIII) give the median survivorship by ages, constructed in the manner already mentioned.

TABLE XXVIa.

Population and Deaths Per Thousand at the Age Periods for the Year 1907.

Maryland's Estimated Population, 1,296,754.

Ages.	Per Cent.	Estimated Population.	Deaths.	Mortality per 1,000 Annually.	Mortality per 1,000 for Age Periods.
Under 5	11.36	147,311	6,541	44.40	222.00
5– 10	11.21	145,366	442	3.04	15.20
10– 15	10.66	138,234	330	2.39	11.95
15– 20	10.13	131,361	618	4.70	23.50
20– 25	9.06	117,486	1,793	7.83	78.30
25– 30	8.58	111,271			
30– 35	7.17	92,977	1,749	9.73	97.30
35– 40	6.68	86,623			
40– 45	5.80	75,212	1,772	12.99	129.90
45– 50	4.73	61,336			
50– 55	4.07	52,778	1,904	20.51	205.10
55– 60	3.09	40,070			
60– 65	2.57	33,327	2,485	43.85	438.50
65– 70	1.80	23,342			
70– 75	1.23	15,950	2,287	87.31	873.10
75– 80	.79	10,244			
80– 85	.33	4,279	1,349	215.15	....
85– 90	.11	1,426			
90– 95	.03	389			
95–100	.00	118			
100 and over	.00	58			

The percentages are from the U. S. Census figures for 1900.

TABLE XXVIb.

WHITE POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1907.

Maryland's Estimated White Population, 1,039,608.

AGES.	Per Cent.	Estimated White Population.	Deaths.	Mortality per 1,000 Annually.	Mortality per 1.000 for Age Periods.
Under 5.......	11.36	118,099	4,649	39.37	157.48
5- 10........	11 21	116,540	286	2.45	9.80
10- 15........	10.66	110,822	210	1.89	7.56
15- 20........	10.13	105,312	376	3.57	14.28
20- 25........	9.06	94,188	1,156	6.34	63.40
25- 30........	8.58	89,198			
30- 35........	7.17	74,641	1,204	8.35	83.50
35- 40........	6.68	69,446			
40- 45........	5.80	60,297	1,246	11.38	113.80
45- 50........	4.73	49,183			
50- 55........	4.07	42,313	1,503	20.19	201.90
55- 60........	3.09	32,134			
60- 65........	2.57	26,719	2,020	44.45	444.50
65- 70........	1.80	18,713			
70- 75........	1.23	12,787	1,985	94.48	944.80
75- 80........	.79	8,223			
80- 85........	.33	3,431	1,093	217.34	....
85- 90........	.11	1,144			
90- 95........	.03	312			
95-100........	.00	95			
100 and over...	.00	47			

TABLE XXVIc.

COLORED POPULATION AND DEATHS PER THOUSAND AT THE AGE PERIODS FOR THE YEAR 1907.

Maryland's Estimated Colored Population, 257,146.

AGES.	Per Cent.	Estimated Colored Population.	Deaths.	Mortality per 1,000 Annually.	Mortality per 1,000 for Age Periods.
Under 5........	11.36	29,212	1,892	64.77	259.08
5– 10........	11.21	28,826	156	5.52	22.08
10– 15........	10.66	27,412	120	4.38	17.52
15– 20........	10.13	26,049	242	9.29	37.16
20– 25........	9.06	23,298	637	14.04	140.40
25– 30........	8.58	22,073			
30– 35........	7.17	18,336	545	15.35	153.50
35– 40........	6.68	17,177			
40– 45........	5.80	14,915	526	19.43	194.30
45– 50........	4.73	12,153			
50– 55........	4.07	10,465	401	21.78	217.80
55– 60........	3.09	7,946			
60– 65........	2.57	6,608	465	41.38	413.80
65– 70........	1.80	4,629			
70– 75........	1.23	3,163	302	58.26	582.60
75– 80........	.79	2,021			
80– 85........	.33	848	256	206.29	....
85– 90........	.11	282			
90– 95........	.03	77			
95–100........	.00	23			
100 and over...	.00	11			

In order to construct the curves of the individual years it is necessary, first, to determine the estimated population for each age period, the number of deaths for each age period, and from these to determine, first, the annual death rate, and then the death rate per age period for the years 1903, 1904, 1905, 1906 and 1907. These figures appear in Table XXVII.

TABLE XXVII.

AGES.	PER CENT.	ESTIMATED POPULATION OF MARYLAND.					DEATHS BY AGES.					DEATH RATE PER 1,000 AT KNOWN AGES.				
		1903.	1904.	1905.	1906.	1907.	1903	1904.	1905.	1906.	1907.	1903.	1904.	1905.	1906.	1907.
0– 5 years.	11.36	140,361	142,211	144,806	145,976	147,311	5,582	5,896	6,074	6,127	6,541	39.77	41.46	42.15	41.97	44.40
5–10 years.	11.21	138,508	133,448	142,184	144,048	145,366	503	525	402	501	442	3.63	3.74	2.83	3.48	3.04
10–15 years.	10 66	131,711	140,332	135,207	136,981	138,234	380	356	339	384	330	2.89	2.67	2.51	2.83	2.39
15–20 years.	10.13	125,163	126,818	128,485	130,171	131,361	615	694	619	615	618	4.91	5.47	4.83	4.73	4 70
20–25 years.	9.06	111,943	113,418	114,924	116,421	117,486	1,604	1,753	1,675	1,677	1,793	7.36	7.94	7.48	7.39	7.83
25–30 years.	8.58	106,012	107,409	108,826	110,253	111,271										
30–35 years.	7.17	88,591	89,757	90,922	92,135	92,977	1,472	1,656	1,574	1,594	1,749	8.60	9.55	9.08	8.96	9.73
35–40 years.	6.68	82,536	83,623	84,727	85,838	86,623										
40–45 years.	5.80	74,663	72,607	73,565	74,530	75,212	1,526	1,679	1,604	1,780	1,772	11.73	12.74	12.16	19.99	12.99
45–50 years.	4.73	58,443	59,213	59,994	60,780	61,336										
50–55 years.	4.07	50,288	50,955	51,622	52,300	52,778	1,678	1,899	1,750	1,870	1,904	18.97	21.48	19.53	20.33	20.51
55–60 years.	3.09	38,179	38,682	39,192	39,707	40,070										
60–65 years.	2.57	31,754	32,173	32,597	33,025	33,327	2,139	2,309	2,203	2,172	2,485	37.76	42.21	40.27	38.67	43.85
65–70 years.	1.80	22,240	22,533	22,831	23,130	23,342										
70–75 years.	1.23	15,198	15,397	15,601	15,806	15,950	1,955	2,246	2,010	2,158	2,287	78.33	88.82	79.49	83.13	87.31
75–80 years.	.79	9,761	9,890	10,002	10,152	10,244										
80 and over.	.47	6,009	6,087	6,169	6,216	6,270	1,192	1,249	1,178	1,232	1,349	198.36	205.19	190.63	199.06	215.15

The percentages are from the U. S. Census figures for 1900.

It has been possible upon the chart only to indicate parts of the curves of 1902, 1904 and 1906. All of these were relatively unfavorable years. When referred to the median curve as a normal, the least favorable year was the year 1904, but it will be seen by reference to the table that the losses which 1904 incurred became more strongly marked after the fiftieth (50th) year, the mortality late in life during the year being especially heavy, as evidenced by the fact that the column for this year shows only 276 survivors at the age of eighty (80) years, which is 37 below the survivorship at this age for 1907. The year 1902, however, after remaining persistently low until the seventieth (70th) year, makes a marked gain in the last decennium and shows the highest number of survivors at the age of eighty (80) of any of the six years (739 persons). For 1907 the number of survivors at the age of eighty (80) is 313. Aside from these peculiarities, however, the variations of the curve appear to be mainly produced by variations in the mortality during the first quinquennium. It appears, therefore: First, that the variations of the curve are in height rather than in form (*i. e.*, the changes are quantitative rather than qualitative); second, that the variations of the curve during these five years, while plainly evident and of considerable importance, are not very marked. Any unusual mortality, however, produced by infectious disease, war, famine or any other extraordinary cause, would be plainly shown in the curve.

TABLE XXVIII.

SURVIVORSHIP BY AGES, 1902, 1903, 1904, 1905, 1906 AND 1907.

10,000 BORN IN	1902.	1903.	1904.	1905.	1906.	1907.
Number reaching 5 years	7,906	8,011	7,927	7,892	7,901	7,780
Number reaching 10 years	7,766	7,866	7,779	7,780	7,771	7,662
Number reaching 15 years	7,658	7,742	7,675	7,682	7,661	7,570
Number reaching 20 years	7,476	7,552	7,465	7,546	7,480	7,392
Number reaching 30 years	6,906	6,996	6,872	6,982	6,927	6,813
Number reaching 40 years	6,329	6.394	6,216	6,348	6,306	6,150
Number reaching 50 years	5,584	5,644	5,424	5,676	5,045	5,351
Number reaching 60 years	4,526	4,572	4,275	4,567	4,019	4,254
Number reaching 70 years	2,807	2,844	2,471	2,728	2,465	2,389
Number reaching 80 years	739	626	276	560	416	313

MORBIDITY STATISTICS, 1907.

During the month of May, 1907, the State Board of Health, for the first time in its history, began the compilation of morbidity statistics. The records were extended back to begin the first of April. The records were at first necessarily incomplete, but the value of even these incomplete returns was demonstrated before the year had closed. Through the definite information available from these returns the State Board of Health has been able to keep town and county health officers informed about cases on the watersheds, and early action on the part of these officers has undoubtedly prevented serious trouble from infected water supplies. Insufficient support, both financially and otherwise, has prevented health officers from making as full use of this information as might have been made, but even the partial guarding of watersheds has prevented a great deal of unnecessary sickness.

The State Board of Health has also been able, through these returns, to predict the epidemic prevalence of various diseases before they became apparent in many communities.

The influenza epidemic of the early part of 1908 was predicted from the 1907 returns some weeks before its beginning, as was also the later epidemic of measles. The morbidity returns constitute an important line of primary defense against epidemics. The mortality returns under the burial permit law, will probably afford protection against the epidemic occurrence of the more malignant pestilences, but for many diseases, especially those of a semi-chronic nature, the death returns do not give sufficiently prompt information to furnish adequate protection. It has repeatedly occurred in towns that the onset of serious epidemics of typhoid fever has not been recognized until practically all of the damage possible has been done.

As already stated, the early returns were very incomplete as regards cases of sickness, but the quantity and quality of the returns showed steady improvement throughout the year. In the month of June the reported cases of sickness for the first time exceeded the recorded deaths.

The greatest number of cases, as well as the greatest number of deaths reported during the nine months beginning April 1st and ending December 31st, was in the month of September (321 reported cases and 196 deaths). This increase was mainly due to typhoid fever, although both scarlet fever and diphtheria reached their height in this month, though an exception is to be noted in the case of diphtheria, which reached its highest mortality and morbidity during the month of November.

The progress of the important communicable diseases in Maryland may be followed by the following summaries taken from the "Health Officers' Bulletin."

TUBERCULOSIS.

April. "Tuberculosis, as usual, leads the list in point of numbers with 93 deaths, which is somewhat lower than the mortality average of the previous year. The maximum duration of the disease among the cases reported was 572 weeks, and the minimum duration 2 weeks. Disinfection after death or removal is being uniformly employed."

May. "The number of deaths increased to 110 during May. A system of checking disinfection was instituted during this month which improved very much the number of disinfections done by the local health boards. Duration—Maximum, 260 weeks; minimum, 4 weeks. Forty-two of the deaths recorded were among colored persons (over 38%). The mortality recorded was the highest of the nine months of the year."

June. "Deaths, 67. The decrease is ascribed to the diminution in the prevalence of influenza and the favorable climatic conditions of June. Practically all of the deaths occurring in infancy, childhood and early adult life were among colored persons, who furnished 38% of the mortality. Duration—Maximum, 260 weeks; minimum, 7 weeks."

July. "Deaths, 82. Three deaths occurred among infants at or under two years of age. While tuberculosis is prevalent and fatal among colored infants, cases among white infants are rare. With infants of both races the disease runs a rapid course, with a tendency to become generalized. About 32% of the deaths were among colored persons. Twenty deaths occurred among persons over the age of 50. It is evident that for Maryland, at least, the popular notion that tuberculosis does not affect old persons is fallacious. Duration—Maximum, 1,560 weeks (a white woman aged 67); minimum, 2 weeks."

August. "Deaths, 76. No infants, and only four children died of tuberculosis during August. All of the children were colored. Ages, 9, 8, and two 11 years. Death in institutions three to four per cent. None occurred in special institutions for the treatment of tuberculosis."

September. "Deaths, 108. It is difficult to account for this high figure in the absence of an epidemic of influenza or other respiratory disease. It may be a reaction from the low average figures of June, July and August. The cool summer has been, on the whole, favorable for pulmonary cases. Colored deaths about 35%. Less than 4% occurred in institutions. None in special tuberculosis hospitals. Of the institutions in which deaths occurred one was a religious institution, one an insane institution and one an almshouse. Twenty-three deaths occurred at or over 45 years of age. The oldest decedent was 81 years. His illness had lasted 20 weeks. During this month the second highest mortality was reported."

October. "Deaths, 75. September was a month of high mortality, and was followed, as frequently occurs, by a month of low mortality. 41% of the deaths were colored persons; only 2 deaths, or less than 2%, occurred in institutions. Duration—Maximum, 520 weeks; minimum, 2 weeks."

November. "Deaths, 69. Only one of the deaths occurred in institutions (less than 1½%). Duration—Maximum, 1,040 weeks; minimum, 2 weeks."

December. "Deaths, 54. Colored deaths about 54½%. The average age at death for December was about 33 years. Of those dying in December 4 of the cases were acute, ranging from 3 to 8 weeks. The average duration of illness for the entire 54 cases was 50 weeks. The number of deaths during this month was the lowest recorded."

INFLUENZA.

April. "The mortality from influenza still remains high (21). This was the predominant cause of death among the acute infectious diseases. All of the deaths but 2 occurred in the extremes of life. The disease was especially prevalent in Baltimore City, Baltimore and Frederick counties, though the prevailing type was not very fatal."

May. "Influenza, with 12 deaths, still leads the list of acute infectious diseases. As stated in the April bulletin, the prevailing type of the disease this year has not been very fatal."

June. "Influenza has shown a steady decline since April. The deaths for April, May and June were 21, 12 and 11, respectively. There are now no epidemic foci."

July. "The deaths from influenza have reached the lowest level since last summer. The deaths reported for the months of April, May, June and July were 21, 12, 11 and 4, respectively.

These figures mark about as nearly a complete extinction of influenza as an epidemic or endemic as can be expected in this State."

August. "Deaths reported, 4; cases reported, 0. In July the same figures were recorded. Another pandemic of influenza is predicted for 1908 by some of the German authorities, who have carefully followed the past history of influenza pandemics down to the last one of 1893."

September. "Only one death and no additional cases reported. This is the lowest mortality reported for influenza this year."

October. "Deaths reported, 3. Additional cases reported, none. This is the lowest mortality so far recorded excepting in September, when there was one death. All the cases occurred in the extremes of life. The ages of the decedents were 1, 67 and 73 years, respectively. Two were colored and one was white."

November. "Influenza is now epidemic in Baltimore City. The increase began to be apparent in November, when there were 6 deaths reported as against 3 in October. The highest previous mortality was reached in April of this year, with 21 deaths. The disease is becoming epidemic in other parts of the State, but will probably reach its highest maximum later than in Baltimore city and county."

December. "The most striking feature as regards the prevalence of infectious diseases during December has been the widely disseminated pandemic of influenza. The epidemic throughout December was mild and few deaths were reported. A considerable proportion of these deaths, however, were returned under pneumonia and broncho-pneumonia. As generally happens in influenza pandemics, the mortality at the onset is low. In the later stages the mortality has always steadily increased. This past experience has been repeated in the present epidemic."

Two varieties of influenza are recognized by the students of the disease: First, the epidemic or endemic influenza; and second, the pandemic influenza.

Apparently the successive pandemics have arisen in Asia and swept westward, involving at intervals of several years practically the whole population of the world. Each pandemic leaves behind a number of endemic cases, which involve only a part of the population for successive years until another pandemic arises. Pfeiffer's bacillus is found in connection with both the pandemic and endemic cases, and probably each class can be ascribed to variations of the same organism.

It is characteristic of the pandemic influenza that it is independent of season and climate, some of the worst epidemics occurring in the summer months. It is probable that telluric influences are overestimated in all forms of influenza. As with most infections of the respiratory organs, vitiated air and overcrowding play an important part in diminishing the bodily resistances, and consequently only the more virulent organisms are capable of producing infection in individuals who have an abundant supply of fresh air.

A pandemic of influenza was predicted for 1908 in the August bulletin, the prediction being based on the observations of some of the German students of the disease.

As already mentioned, the previous pandemics have originated in Asia, and the course of the present epidemic in the United States would lead to the belief that it had the same origin.

On account of the difficulty of tracing the beginning of an epidemic of influenza, conclusions must be drawn from the maximum prevalence in various sections of this country. The disease apparently reached its highest point in New York and Boston and other ports of the North Atlantic seaboard, thence spreading west and south, generally following the lines of greatest travel. The disease reached its height in Pittsburg before Baltimore and Washington, and is now very prevalent in Chicago.

Baltimore and Washington were attacked practically simultaneously, and the first week in January gave a general mortality higher than the corresponding period of any previous year.

As usually happens, the extremes of life have borne the brunt of this mortality. From Baltimore City influenza has spread with varying rapidity to the rural districts. The probability of the foreign origin of the disease is strengthened by the fact that it has almost invariably spread from the cities to the country. A remarkable and contradictory phenomenon in connection with the prevalence of influenza has been the low mortality from tuberculosis, which reached, in December, the lowest figure ever recorded for any month during which vital statistics have been collected by this Board.

It was naturally suspected that this decline was in some way dependent upon the prevalence of influenza, and would appear in the influenza figures or in the returns for bronchitis (acute and chronic), broncho-pneumonia and lobar pneumonia. The deaths from these causes in December, however, numbered only 61, while for the same month in 1904 and 1905 they were 71 and 72. An examination of the tuberculosis returns for the months of April to December, inclusive, show 926 deaths in 1904, 811 in 1905 and 734 in 1907. It is evident, therefore, that there has been a well-marked declination in the returned tuberculosis mortality ever since the special laws on the subject became effective, and there is reason to believe that there has been a real and effective decline of the disease in Maryland. Important influences in this decline have been the work of the Maryland Association for the Prevention and Relief of Tuberculosis; the Instructive Visiting Nurses' Association and the special hospitals and dispensaries, all of which have devoted a large part of their energies to prophylaxis.

Nineteen deaths were reported during the month of December, as against 6 in November. Four of the decedents were octogenarians; one was an infant but one month old; another an infant of seven months. Of the 19 deaths, 15 were white and 4 colored. Four epidemic centers were reported.

Mumps.

April. "Mumps has been very prevalent in Baltimore City and in Baltimore county. It is impossible to say whether the epidemic originated in the city or in the county, but the disease was apparently epidemic in the county before it became very prominent in the city. No deaths were reported. The disease is seldom a menace to life, but it must be remembered that the after effects are often serious, especially when inflammation occurs in the reproductive glandular tissues. The disease is not highly contagious, but it is very persistent, especially in schools and institutions. The present epidemic has been mainly noticeable in schools. In a school the virus may become attached to the books, slates, slate pencils, sponges, drinking cups and other articles used by the scholars. Much sickness may be avoided by the prompt report of the first case which arises to the local health officer, followed by thorough disinfection of the room and isolation of the articles used by the affected scholar."

May. "Fourteen cases of mumps were reported and one death, making 15 cases in all. The death occurred in a white female infant, aged 15 months, after an illness of one week."

June. "Fifteen cases of mumps reported; no deaths. Eleven of these cases occurred in Baltimore county, where the disease has been very prevalent since spring. All of the cases reported were among white persons, and only one of these occurred in a child."

July. "Fifteen cases reported; no deaths. Nine of these cases occurred in Baltimore county. Six additional cases were reported from New Market, Frederick county."

August. "Cases reported, 4; no deaths. The prevalence of mumps appears to be steadily declining."

September. "The most striking new factor which has arisen in the conditions controlling the prevalence of contagious diseases has been the opening of the schools throughout the State during the early part of September. An increase in the prevalence of the so-called minor infectious diseases during the month of September was predicted on this account. This has proven true in every case with the exception of measles and mumps. Measles has remained nearly stationary, but mumps has shown a marked decline. Too much dependence, however, should not be placed on the returned figures for mumps. The majority of cases are so mild that a large proportion are not under the care of any physician. In many of the counties physicians are not aware that this is one of the diseases that must be notified under statutory requirement. Mumps has apparently been moving slowly westward from Baltimore City and Baltimore county during the past few months. Such slow progression is to be expected of mumps in view of its comparatively mild communicability and the persistence of the virus when established in any locality. There have been, strange to say, two deaths reported from mumps this year, one of which occurred in September, and one in May. Deaths reported, one (1). White, female, aged two years, in Baltimore county. No additional cases."

October. "Deaths reported, none. No additional cases. During September there was one death. This is the smallest number of cases of mumps yet recorded, and the disease is evidently on the wane."

November. "No deaths reported. Cases reported, 7. Of these, 4 occurred in one family. No cases or deaths reported in October. The ages of the patients were 8, 11, 12, 14, 17 and 18."

December. "No deaths. Number of cases reported, 6, as against 7 reported during November. All of the cases were white. Five of the cases were reported from Salisbury, Wicomico county, one of which was a white man 34 years of age."

CHICKEN-POX.

April. "No cases of sickness and no deaths were reported in this month."

May. "Two cases of chicken-pox were reported; one from Rock Hall, Kent county, and the other from Mt. Washington, Baltimore county."

June. "One case at Mt. Wilson, Baltimore county."

July. "One case at Mt. Washington, Baltimore county."

August. "One case in Baltimore county."

September. "No cases and no deaths reported."

October. "Cases reported, 6; no deaths."

November. "Cases reported, 12. Six of these occurred in Kensington, Montgomery county, and one each in Baltimore, Frederick and Somerset county, and two in Garrett. Epidemic is reported in Olney district, Montgomery county; particulars not given."

December. "Number of cases reported, 24; no deaths. Three of the cases were adults; colored; one male and two females, aged, respectively, 24, 35 and 13. The remaining cases were in children ranging in age from a year and a half to 13 years. Twenty-one of the cases were reported from Baltimore county, where the disease was epidemic; nine of the cases occurring at Mt. Winans."

WHOOPING-COUGH.

April. "Eight deaths reported, 3 of which occurred in Worcester county. Seven occurred in colored children, among whom whooping-cough appears to be especially fatal. The oldest child was 4 years of age; the youngest, 1 month. The duration of the illness ranged from 2 to 9 weeks, with the exception of one case, in which the duration was 52 weeks."

May. "Eight deaths reported, the same number as were reported in April. Three of these occurred in Queen Anne's county and 2 in Worcester county. Three cases were reported in Worcester county in April. Four of the deaths were among colored and 4 among white children. The oldest child was 2 years of age; the youngest 1 month. The duration of illness was 2 to 8 weeks, with the exception of one child, in which the duration was only 5 days."

June. "Seven deaths reported; 4 colored and 3 white. The oldest person dying of whooping-cough was a colored child 12 years of age. The remaining deaths occurred at 2 years or younger. Seventeen cases of sickness were reported, 15 from Queen Anne's county and 2 from Worcester county."

July. Eight deaths reported; six additional cases. Of the 8 deaths all occurred among infants. Five were colored and 3 white. The maximum age was 2 years, the minimum age 3 months. The maximum duration of illness, 6 weeks; the minimum, 3 weeks. The disease, as usual, was much more fatal among colored infants."

August. "Deaths reported, 10. Cases reported, 5. All of the deaths reported were among infants of one year or less. No epidemic center."

September. "Deaths reported, 15; 3 additional cases. Most of the cases occurred, as in July and August, on the Eastern Shore."

October. "Deaths reported, 10. Additional cases reported, 12. At two places 4 cases were reported in one family—in Chestertown and in Barnesville. All of the deaths occurred among infants."

November. "Eight deaths and 17 cases of sickness were reported."

December. "Deaths reported, 7; additional cases reported, 13."

MEASLES.

April. "Seven deaths and 9 cases of sickness reported."

May. "Seven deaths reported and 24 cases of sickness. Thirteen of the cases of sickness and 2 of the deaths were reported from Baltimore county. The oldest person dying was 8 years of age; the youngest, 1 month. It is very unusual for measles to be contracted by children under 6 months of age."

June. "Measles is apparently declining. The June mortality (5 deaths) is lower than it has been since 1902. Measles is epidemic (about 100 cases) at Reisterstown, Baltimore county. In addition to the Reisterstown epidemic, 90 cases were reported from the other counties. Two of the 5 deaths occurred among adults."

Owing to the extreme contagiousness and long period of infectiousness of measles, it is doubtful if much is done by present sanitary measures to diminish the general prevalence of measles.

Protection of young infants is important, as measles is a fatal disease among infants.

July. "Deaths reported, 2. Cases of sickness reported, 32. The disease is still epidemic in Brunswick, Frederick county."

August. "Measles has shown a marked decline. No deaths and only 5 cases of sickness being reported. This is the first month since the beginning of the year that no deaths have occurred from measles."

September. "Deaths reported, 2; additional cases reported, 3. No epidemic centers."

October. "No deaths and 2 cases reported. In addition, an epidemic of measles is reported in the vicinity of Liberty Grove, Cecil county."

November. "The increase in measles has been very marked. The lowest number of cases reported in this year occurred in October; 2 cases and no deaths. During November there were 38 cases of measles reported, and 2 deaths."

The mortality from measles is confined mainly to infants; but at all ages, and especially in children, the increased susceptibility to tuberculosis should be remembered, and a special endeavor should be made to guard children and convalescents for about a year, against exposure to contagion, and also to take measures, as far as possible, to prevent the development of any latent tubercular lesions. The peribronchial and mediastinal glands are generally swollen after measles, and are particularly susceptible to tuberculosis implantation. This is, in fact, a very common site for tuberculosis to begin in children, secondarily involving the pulmonary tissue.

December. "Two deaths reported from Somerset county. One death was that of a white woman aged 21 years; the other death occurred in a boy 7 years old. Additional cases reported, 23. Last month there were 38 cases reported. As in November, Howard county still heads the list with 14 cases."

SCARLET FEVER.

April. "No deaths; 3 cases reported from the counties."

May. "Two cases reported, both in Kent county. No deaths. Apparently there are very few cases in the State, and all of a mild type."

June. "Six cases reported. No deaths. Baltimore county, 3 cases; Allegany county, 2 cases; Garrett county, 1 case."

July. "Nine cases of sickness reported. Deaths reported, 2. Six cases were reported in Lonaconing, Allegany county—three in one family."

August. "Deaths reported, none; cases reported, 17. The disease is epidemic at Lonaconing (9 cases reported)."

September. "The rise in scarlet fever has been quite pronounced. Deaths reported, 1; cases reported, 47. Two epidemic centers, Lonaçoning (6 cases), and Hagerstown (22 cases). All of the cases reported are among white children of school age, with the exception of two cases, one the fatal case which occurred at Lonaconing, a female aged 20 years, and a case of sickness at Hagerstown, an individual aged 18 years."

October. "Deaths reported, 4; cases reported, 24. Epidemic centers still exist at Lonaconing (6 cases) and Hagerstown (14 cases). All cases reported were among white children. The average age of the cases of sickness was about 7 years; the average age of the fatal cases was much younger, about 2 years."

November. "Deaths reported, 3; additional cases reported, 12. No epidemic centers."

December. "Deaths reported, 2; additional cases reported, 62. Nine cases occurred in Allegany county, 14 cases in Baltimore county, 9 cases in Garrett county and 12 cases in Washington county. The disease is mildly epidemic in Caroline county, at Denton, Greensboro and Tuckahoe."

DIPHTHERIA.

April. "This disease, which was epidemic in several parts of Maryland during the winter months, diminished rapidly with the beginning of spring. A further reduction may be looked for with the close of the school year. Seven deaths were reported and 4 cases of sickness. There are no epidemic centers at present. Two cases each are reported from Laurel and Crisfield."

May. "Eight deaths reported and 20 cases of sickness. The disease is generally distributed and in endemic form."

June. "Three deaths reported and 12 cases of sickness. Diphtheria is evidently rapidly declining. The mortality is lower than the corresponding months in 1902, 1903 and 1904."

Diphtheria is in general a disease of winter months and of the school year, and a material diminution may always be looked for during June.

July. "Deaths reported, 2; cases of sickness reported, 11. Diphtheria has probably reached its lowest ebb, and increased prevalence may be looked for at the beginning of the school year."

August. "The opening of the schools after the summer vacation should put health officers on their guard against the minor infectious maladies. An increase of measles, whooping-cough, scarlet fever and diphtheria is almost inevitable, unless extreme vigilance is exercised. As regards the latter disease, particular care should be taken to make an early diagnosis of cases which may show mild or no symptoms, either local or general, but which carry diphtheria bacilli in their throats."

It is not very uncommon for true diphtheria to occur without membrane. These cases (diphtherie fruste) may appear either in the form of a follicular tonsillitis (lacunar diphtheria), which is rare, or as an ordinary angina with diffuse redness and swelling of the palate and pharynx, which is quite common.

Outbreaks in schools should be treated by general immunization with antitoxin and by isolation. In cases exposed but not suffering with diphtheria, and in diphtheria convalescents, the result of throat cultures should be the main guide in determining the extent and duration of quarantine.

As regards the patient, two negative cultures, carefully taken, should be sufficient to allow his release. Of course, equal care must be taken of inanimate objects, among them the patient's clothing. The common use of many articles in the school room favors contagion in diphtheria as well as in the other diseases mentioned. *In case of long persistence of diphtheria bacilli in the throat of a convalescent patient, local application of antitoxin will often give favorable results.* Deaths reported, 2; cases of sickness reported, 12. No epidemic centers.

September. "Deaths reported, 8; additional cases reported, 35. During July and August diphtheria reached its lowest figures, 11 and 12 cases, respectively, with 2 deaths during each month. The disease is, as already stated, generally distributed. There are no epidemic foci. The present figures are about triple those of August."

October. "Diphtheria has shown no evidence of a general increase, though the existence of small epidemic foci in several neighborhoods is a sign of warning which should not be ignored. With the onset of winter, a progressive increase in diphtheria can be predicted. While this is not so striking as is the summer rise in the aestival diseases proper, such as cholera infantum and typhoid fever, diphtheria can be properly spoken of as a disease of winter."

Thus, in Maryland, during the four years ending 1905, the winter months (January, February, November and December) in each year furnished more cases than all the rest of the eight months of the year. The following figures from the rural districts will illustrate this more convincingly. In 1902 the deaths from diphtheria during the four winter months (January, February, November and December) were 80 in number. The total deaths during the other eight months of the year were 61. In 1903 the deaths from diphtheria during the winter numbered 76; during the remainder of the year, 74. In 1904, deaths from diphtheria during the winter numbered 62; during the remainder of the year, 48. In 1905, deaths from diphtheria during the winter months numbered 60; during the remainder of the year, 55.

The experience of antitoxin manufacturers is equally convincing, and applies to no one locality. All of these manufacturers agree that their busiest season is during the winter months.

Diphtheria is an inflammation of the mucous membrane, caused by the presence of the Klebs-Loeffler bacillus. While this inflammation affects generally the tonsil, larynx and pharynx, it may occur in almost any mucous membrane. Infection of the mucous membrane of the nose, trachea and eye are not uncommon. Open wounds and the lower alimentary tract are occasionally infected. All forms are contagious if the secretions can reach the exterior, and this is always the case with the secretions from the mucous membranes of the body. Handkerchiefs and cloths are the most dangerous sources of infection, but any object may have the virus transferred to its surface, and thus become an independent source of infection.

DIPHTHERIA CAN ALMOST ALWAYS BE CURED BY LIBERAL DOSES OF ANTITOXIN ADMINISTERED EARLY IN THE COURSE OF THE DISEASE.

The importance of an early diagnosis is thus evident, both from the standpoint of treatment and that of prevention. Failure to promptly report cases is always productive of injury and often of death and destruction.

ONE THOUSAND UNITS OF ANTITOXIN CONVEY AN IMMUNITY LASTING ABOUT SIX MONTHS.

Diphtheria bacilli generally progressively lose their virulence when they have left the body for some time. Individuals can carry virulent bacilli in their mucous membranes *without themselves having diphtheria*. This is also true of convalescents from the disease.

LOCAL APPLICATIONS OF ANTITOXIN WILL FREQUENTLY CAUSE DISAPPEARANCE OF THE BACILLI FROM SECRETIONS WHERE THEY HAVE PERSISTED FOR A LONG PERIOD.

These three uses of antitoxin should be always kept in mind.

"Deaths reported, 6; additional cases reported, 25. The tendency of the disease seems to be to move from the thickly settled to the sparsely settled neighborhoods."

November. "Diphtheria shows a most notable increase. There are 56 cases reported for November, as compared with 25 in October. The mortality has increased from 6 to 13. There has apparently been a steady increase in diphtheria since the schools opened in September. The disease is generally distributed, and there are no marked epidemic centers. Five cases occurred in one family in Queenstown. The disease is now most prevalent on the Western Shore. The only epidemic centers of note are Annapolis (6 cases), and Frederick (17 cases). Ten cases (including deaths) occurred on the Eastern Shore, against 59 on the Western Shore."

December. "Nine deaths in December and 56 additional cases reported. One death occurred in a colored woman aged 19."

TYPHOID FEVER.

April. "Only 7 deaths and 14 cases of sickness were reported for April, an unusually low number for this month. The constant high rains have kept the subsoil water at an unusually high level, which has diminished greatly the sources of infection of wells and springs, and the constant subnormal temperature has diminished the growth of the typhoid bacillus. To these two causes the low typhoid mortality is almost undoubtedly due. Three cases have been reported from Cumberland; three cases from Brunswick and one from Midland. The sewage of all of these towns passes into the North Branch of the Potomac, hence it is necessary for health officers having supervision of towns using the unfiltered Potomac water as a water supply to promptly take all necessary precautions if an epidemic is to be averted."

HEALTH OFFICERS SHOULD IMPRESS ON ALL PHYSICIANS THE IMPORTANCE OF BEDSIDE DISINFECTION.

There is also evidence that typhoid fever is becoming endemic in Kent county, 5 cases having been reported during April.

The milk supply of the larger towns should now be carefully scrutinized. The cold weather has delayed the onset of cholera infantum, and ample time is available to institute measures of precaution before infected milk has produced its usual results.

Milk is now being recognized as a very common source of epidemics of typhoid fever, though, as in cholera, the larger epidemics arise through polluted water.

May. "There were 9 deaths reported during May and 20 cases of sickness. There is evidence that the usual summer rise in the incidence of typhoid fever, which was delayed by the low temperature and high ground water, is now commencing with the subsidence in the level of the ground water and the increase in the daily temperature. Only one additional case has been reported from Cumberland. A mild epidemic in Kent county has subsided with the closing of an infected well. There is still time for health officers to protect their communities against avoidable sickness and death by carefully guarding the water and milk supply."

Health officers are again requested to impress on all physicians THE IMPORTANCE OF BEDSIDE DISINFECTION.

June. "The important communicable diseases have all, with the exception of typhoid fever, shown slight diminution during the month of June. The typhoid fever mortality is lower in June of this year than it has been for the three preceding years. Deaths reported, 10; cases of sickness reported, 39. The summer rise appears to have reached Allegany county earlier this year than any other part of the State. Eleven cases are reported from Cumberland. Precautions to communities using raw water from the Potomac or its North Branch should be repeated."

July. "The increase in typhoid fever which was predicted in the last bulletin has become very marked. Sufficient time has not elapsed for a large increase in the number of death returns, but the morbidity reports are nearly double those of June and triple those of May. Deaths reported, 14; cases of sickness reported, 61. The epidemic in Cumberland, Allegany county, seems to have died out. No cases of sickness nor death were reported from Cumberland. The most striking epidemic is that occurring at Cambridge, in Dorchester county. Twenty-one cases, with one death, are reported."

August. "The mortality and sickness from typhoid fever have both more than doubled since July. The rise in typhoid fever has been all the more sudden and striking on account of the comparative immunity of the State during the summer, but even with this sudden rise, it is not likely that the total prevalence this year will be as great as in previous years. Thus, the mortality from typhoid fever during July and August, 1905, was 25 and 42, respectively, as against 14 and 32 for the same months of this year. The western mountainous counties, Allegany and Washington, which showed the earliest onset of typhoid fever, apparently are now very well off, though three deaths are reported from Cumberland. The small epidemic of July at Cambridge is rapidly declining; only 6 cases are reported and 1 death. Typhoid fever almost invariably reaches its height during the month of August, and its decline may be now expected. The cool evenings and fall rains mean a lower mean monthly temperature and high subsoil water level, both of which conditions are favorable to diminished mortality and prevalence. Deaths reported, 32; cases of sickness, 153."

September. "A decline in typhoid fever, which was expected, did not occur, and, on the contrary, there has been a continued and considerable increase. Thus, during August there were 32 deaths and 153 additional cases reported, while during September there were 60 deaths and 233 cases reported. There is apparently some prevalence of the disease in Cumberland, though the returns are defective and do not clearly show this. There were, however, 4 deaths in Cumberland during September. Four deaths also occurred in Cambridge, with 10 additional cases. Subsequent to September, 75 cases were reported from Baltimore county, which probably includes nearly every case which has occurred in the county. The professional standards in Baltimore county are high, and cases are both diagnosed and reported promptly. This has undoubtedly saved the county from any extensive epidemic, and also has afforded considerable protection to the watershed of Baltimore City. Ten cases are reported from Elkridge, Howard county; no deaths. Eight cases are reported from Chestertown. Fifteen cases from Hagerstown. There has also been a rather sharp outbreak at Oxford. Many of the communities which last year suffered outbreaks of typhoid fever, due to contaminated water, have been able to protect themselves this year by proper control of their water supply; but some of the more important outbreaks of this year have arisen from sources more difficult to control."

October. "Typhoid fever is showing a very substantial diminution. The mortality has dropped from 60 to 47, and the morbidity from 233 to 199. It will probably reach its normal low level before the first of December."

November. "During November there has been an increase in all of the infectious diseases with the exception of typhoid fever and scarlet fever. The decline in typhoid fever has been pronounced, but the disease still remains higher than it should at this season of the year. As is naturally to be expected, the decline in the morbidity is greater than that in the mortality. The number of new cases has decreased from 199 to 156, and the number of deaths from 47 to 40. The highest mortality and morbidity in typhoid fever was reached during the month of September. A rapid decline may be expected during the month of December and of January of next year. The number of deaths (40) reported is unusually high for this season of the year. Typhoid fever did not appear this year until late in the season, and the decline has been correspondingly late. During 1905 there were only 28 deaths in November and during 1904 37 deaths."

December. "Deaths reported, 23. This is the lowest mortality so far recorded. In November the number of deaths from typhoid fever was 40; number of cases reported, 73; last month's morbidity, 156. A prediction made in the October Bulletin that 'typhoid fever would probably reach its normal low level by December' has been fulfilled."

Small-Pox.

April. "No cases of small-pox were reported in April."

May. "One case reported in Kent county, Ida Wilson, Rock Hall. Four additional cases of small-pox have been reported during June, and there is evidence that this epidemic is merely a recrudescence of the epidemic at Rock Hall during December and January. Two of these cases were imported into Baltimore. It is necessary, therefore, to keep a vigilant watch on persons returning from Rock Hall and vicinity."

June. "Four cases were reported from Rock Hall, Kent county, during June. No deaths. No reports have been received of additional cases subsequent to June 24th. Health officers are advised, however, to keep persons arriving from Rock

Hall under observation for 20 days. Three of the patients were males and 1 was a female."

July. "Three cases reported from Rock Hall, Kent county, during July. Four cases were reported from Rock Hall during June. Of the three cases reported during July, two were white and one colored. Complete returns were received this month of thirty-two (32) cases occurring in Rock Hall since January 1st. The epidemic has been, like most epidemics of recent years, remarkably mild. The majority of the cases were classified as 'discrete,' 'mild discrete,' a few 'severe discrete' and a small number as 'semi-confluent.' "

It has been very forcibly illustrated in this, as in previous epidemics, that in all the persons atacked, vaccination had either not been successful or had not been successfully performed with the 6 or 7 years generally assigned as the period of complete immunity produced by vaccination. On the other hand, persons in infected houses, successfully vaccinated within this period, invariably escaped. These results were so striking and so conclusive as to wholly refute the claims made by a practitioner of Kent county and certain other persons that the disease in question was not small-pox.

August. "No cases reported. The epidemic of the past 8 months in Kent county has fortunately not spread to other localities with the exception of two cases imported into Baltimore."

September. "No cases reported."

October. "No cases reported."

November. "No cases occurred in November. The development of the epidemic in Baltimore county during December has been described in Circular Letter No. 27."

December. "Number of cases reported, 10; no deaths. All of the cases were in Baltimore county, 9 in Highlandtown, and 1 at Roland Park. Three of the small-pox cases were white and 7 were colored. All of the cases were in persons unprotected by vaccination."

OTHER DISEASES.

June. "An interesting feature of this month's bulletin is the report of two cases of actinomycosis from Garrett county."

Two cases of actinomycosis were reported from Bond. Garrett county. Both occurred in infants who lived practically wholly on milk, and in one of whom it was an exclusive article of food. The cow from which this milk was obtained was found to be suffering from lump-jaw, and the disease in the children was ascribed by Dr. Wilson, the attending physician, to infection from the cow. The State Live Stock Sanitary Board was asked to investigate the cow, and Dr. Wilson was asked to send scrapings and pus from the lesions of the children to the laboratory of the State Board of Health for examination. The results of the analysis was awaited with great interest, as the method of infection with the ray-fungus is not known, and no case has ever previously been reported of transmission of actinomycosis from animal to animal, from man to man, or from animal to man.

TABLE XXIX.

Reported Cases and Deaths From Communicable Diseases—Rural Maryland, 1907.

	April	May	June	July	August	September	October	November	December	Total, Apr. 1st to Dec. 31.
Tuberculosis	**93**	**110**	**67**	**82**	**76**	**108**	**75**	**69**	**54**	**734**
	*	*	*	*	*	*	*	*	*	*
Measles	**7**	**7**	**5**	**2**	**0**	**2**	**0**	**2**	**2**	**27**
	9	24	81	32	5	3	2	38	22	216
Whooping Cough	**8**	**8**	**7**	**8**	**10**	**15**	**10**	**8**	**7**	**81**
	0	0	17	6	5	3	12	17	13	73
Scarlet Fever	**0**	**0**	**0**	**2**	**0**	**1**	**4**	**3**	**2**	**12**
	3	2	6	9	17	47	24	12	57	177
Typhoid Fever	**6**	**9**	**12**	**14**	**32**	**60**	**47**	**40**	**23**	**243**
	14	20	39	61	153	233	199	156	52	927
Diphtheria	**7**	**8**	**3**	**2**	**2**	**8**	**6**	**13**	**9**	**58**
	4	20	12	11	12	35	25	56	39	214
Influenza	**21**	**12**	**11**	**4**	**4**	**1**	**3**	**6**	**19**	**81**
	†	†	†	†	†	†	†	†	†	†
Chicken Pox	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	....	....	1	1	1	0	6	12	18	39
Mumps	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**
	4	14	15	15	4	0	0	7	0	59
Small-pox	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	0	1	4	3	0	0	0	0	10	18
Other Diseases	....	....	‡							
Total of ten	**142**	**155**	**105**	**114**	**124**	**196**	**145**	**141**	**116**	**1,238**
	34	81	175	138	197	321	268	298	211	1,723

Deaths are in bold-face type; reported cases in ordinary type.

*Reported cases separately compiled.

†Only deaths reported.

‡2 cases actinomycosis reported in Garrett County.

TABLE XXX.

CASES OF TYPHOID FEVER ON WATERSHEDS, 1907.

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
BALTIMORE CITY WATER SYSTEM.							
Gunpowder River watershed	......	......	......	9	6	2	17
Lake Roland watershed....	1	4	......	3	2	3	13
Patapsco River............	1	6	27	17	11	4	66
Herring Run..............	*	*	*	*	*	*	*
Potomac River............	8	34	57	77	36	41	253
Susquehanna River........	......	1	2	5	......	1	9
Total....................	10	45	86	111	55	51	358

*Not compiled.

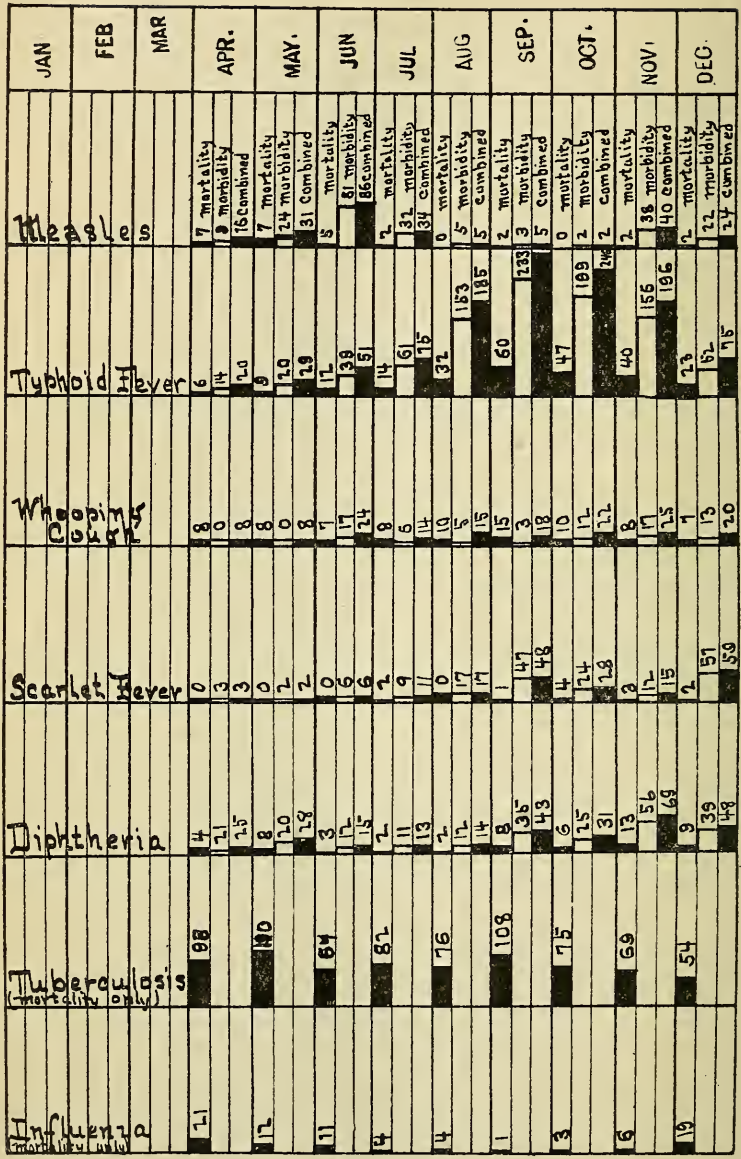

JAN
FEB
MAR
APR.
MAY.
JUN
JUL
AUG
SEP.
OCT.
NOV.
DEC.
Measles
7 mortality
9 morbidity
16 combined
7 mortality
24 morbidity
31 Combined
5 mortality
81 morbidity
86 combined
2 mortality
32 morbidity
34 combined
0 mortality
5 morbidity
5 combined
2 mortality
3 morbidity
5 Combined
0 mortality
2 morbidity
2 combined
2 mortality
38 morbidity
40 combined
2 mortality
22 morbidity
24 combined
Typhoid Fever
6
14
20
9
20
29
12
39
51
14
61
75
32
153
185
60
233
47
189
240
40
156
196
23
52
75
Whooping Cough
8
0
8
8
0
8
7
17
24
8
6
14
10
5
15
15
3
18
10
12
22
8
17
25
7
13
20
Scarlet Fever
0
3
3
0
2
2
0
6
6
2
9
11
0
17
17
1
47
48
4
24
28
3
12
15
2
51
53
Diphtheria
4
21
25
8
20
28
3
12
15
2
11
13
2
12
14
8
35
43
6
25
31
13
56
69
9
39
48
Tuberculosis
(mortality only)
98
110
64
82
76
108
75
69
54
Influenza
(mortality only)
21
12
11
4
4
1
3
6
19

Chart 20.

REPORTS OF
County and Town Boards of Health.

Reports of County Health Officers.

ALLEGANY COUNTY.

Dr. Charles H. Brace, Health Officer. No report.

ANNE ARUNDEL COUNTY.

Dr. J. J. Murphy, Health Officer. No report.

BALTIMORE COUNTY.

First District.

Catonsville, Md., December 31, 1907.

Dr. Marshall L. Price,

Secretary State Board of Health.

Dear Doctor: In accordance with Section 13 of Article 43 of the Code of Public General Laws of Maryland, I hereby submit to you my annual report for the First Election District of Baltimore County for the year of 1907.

Before proceeding I wish to acknowledge my thanks to Dr. Charles L. Mattfeldt for the data herein contained and also for valuable assistance in compiling the statistics, as I have been Health Officer only since December 1, when Dr. Mattfeldt resigned to take his seat of County Commissioner of Baltimore county.

We have gone through the past year without an epidemic of any kind, which you will see by referring to the table of contagious diseases herewith reported.

During the year there has been 20 cases of typhoid fever reported, with two deaths; most of the infections very likely occur from private sources, as the cases occurred were widely separated and not connected by any common means of carrying the infection.

There is one pernicious practice which is quite general and which should be stopped, and that is the converting of live wells into cesspools, by which means the infection can be carried to a considerable distance and thereby cause distant water supplies to become infected.

Vaccination has been very thoroughly done throughout this district, with the gratifying result of not a case of smallpox.

I am sorry to be compelled to say in this first report of mine that our birth record is not as complete as it should be, as I have reason to believe that there are some births that have not been reported during the past year. The same can also be said of contagious and infectious diseases, and until the law is made more effective there will be a few who will continue to violate the law.

I herewith submit to you the statistics of my district in a tabulated form, which are both interesting and instructive.

TABLE OF CONTAGIOUS AND INFECTIOUS DISEASES REPORTED FROM JANUARY 1, 1907, TO DECEMBER 31, 1907, IN FIRST DISTRICT BALTIMORE COUNTY.

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Varicella	2	...	2	1	...	...	...	...	...	...	...	...	5
Mumps	4	5	...	...	...	...	4	...	...	...	1	...	14
Measles	1	...	...	...	12	3	1	...	...	...	4	1	22
Diphtheria	...	...	...	1	1	...	4	...	...	...	1	1	8
Typhoid fever	...	...	...	...	...	4	2	1	5	5	2	1	20
Scarlet fever	...	...	2	...	...	...	1	...	...	...	...	...	3
Total	...	...	...	...	...	...	...	...	...	...	...	...	72

Births for 1907 in the First Election District—White, male, 69; white, female, 65; total white, 134. Colored, male, 10; colored, female, 8; total colored, 18. Still Born—White, male, 2; white, female, 2; total, 4. Colored, male, 1; colored, female, 1; total, 2. Grand total of births, 158.

During the year of 1907 there were 177 deaths in the First Election District, and 41 of this number occurred in public institutions, and if we take this number from the total number of deaths, we find that there were 136 deaths among the residents.

The deaths occurring in the public institutions should not count with the mortality of the district, as many of the inmates are sent into the districts to these institutions in a dying condition. There were 159 natives and 18 foreign-born citizens who died. There were 149 deaths among the white population; of these 81 were males and 68 females. Colored, 28; males 15 and females 13. Ages at death had a wide range—from birth to 97 years—the first five years giving its largest share.

0 to 5 years, 35; 5 to 10 years, 1; 10 to 15 years, 1; 15 to 20 years, 2; 20 to 25 years, 6; 25 to 30 years, 8; 30 to 35 years, 7; 35 to 40 years, 11; 40 to 45 years, 6; 45 to 50 years, 12; 50 to 55 years, 9; 55 to 60 years, 10; 60 to 65 years, 14; 65 to 70 years, 13; 70 to 75 years, 16; 75 to 80 years, 13; 80 to 85 years, 8; 85 to 90 years, 3; 90 to 100 years, 2. Total, 177.

Occupations—No occupation, 73; merchant, 7; housewife, 20; farmers, 9; milliner, 1; cigarmaker, 1; brakeman, 1; clergyman, 1; miller, 1; school teachers, 2; saloonkeeper, 1; millworkers, 3; religeuse, 2; dentist, 1; clerk, 1; laborers, 14; sexton, 1; molder, 1; photographer, 1; journalist, 1; waiter, 1; stevedore, 1; dressmakers, 3; painter, 1; saddler, 1; contractor, 1; teamster, 1; domestic, 1; coachman, 1; stonemasons, 2; blacksmith, 1; watchmen, 2; lace cap maker, 1; traveling salesman, 1; carpenters, 4; jeweler, 1; mechanic, 1; physician, 1.

The causes of death were as follows: Marasmus, 5; aortic aneurism, 1; valvular disease of heart, 14; heart disease, variety not given, 3; carcinoma of ear, 1; carcinoma of uterus, 3; carcinoma of stomach, 3; carcinoma of bladder, 2; carcinoma of breast, 1; carcinoma of face, 2; cancer, situation not given, 1; general paresis, 9; senile dementia, 1; fatty degeneration of heart, 1;; still born, 7; premature birth, 5; cirrhosis of liver, 1; cerebral congestion, 1; cerebral hemorrhage, 11; pneumonia, 7; broncho-pneumonia, 5; bronchitis, 3; chronic bronchitis, 2; la grippe, 3; Bright's disease, 20; diphtheria, 2; senile gangrene, 2; gastritis, 2; entero colitis, 3; uraemia, 1; perperal septicæmia, 1; cerebral thrombosis, 1; hemorrhage from fontanelle, 1; dentition, 1; epilepsy, 3; tuberculosis, 23; cholera infantum, 2; cerebro-spinal meningitis, 2; asphyxiation by illuminating gas, 2; senility, 3; syphilis, 1; pistol shot wound of lung, 1; carbolic acid poisoning, 1; abscess of liver, 1; Ludwig's disease, 1; acute mania, 2; pleurisy, 1; typhoid fever, 2; chronic alcoholism, 1; catarrhal jaundice, 1; pistol shot wound through brain, 1; gastro-enteritis, 1; locomotor ataxia, 1; acute indigestion, 1; congenital deformity of heart, 1; unknown cause, 1. Total, 177.

During the year there were two suicides and three accidental deaths from violence.

Respectfully submitted,
Arthur H. Mann, Jr., M. D.,
Health Officer.

Baltimore County—*Second District.*

Granite, Md., February 25, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

I respectfully submit following as report of local health office of Second District, Baltimore county, for 1907. Report of births, 63; report of deaths, 43; report of disinterments, 2; report of infectious diseases, 21; free vaccinations, 119.

Yours,
H. F. Shipley.

Baltimore County—*Third District.*

Dr. Marshall Langton Price,
Secretary State Board of Health.

Dear Sir: During the year 1907 there were reported in this district 124 deaths from al causes, divided as follows: White, males, 68; white, females, 41; colored, males, 8; colored, females, 7; total, 124. Out of this number of deaths there were 17 from tuberculosis, 15 being of the lungs and 2 of the kidney. They were divided as follows: White, males, 11; white, females, 4; colored, females, 1; colored, males, 1.

During the year 1907 there were reported in this district 77 births, divided as follows: White, males, 31; white, females, 40; colored, females, 3; colored, males, 3; total, 77. Of this number 71 were living and 6 were still born.

During 1907 there were reported 75 cases of contagious and infectious diseases, as follows: Measles, 30; diphtheria, 10; typhoid fever, 12; mumps, 7; scarlet fever, 3; pertussis, 8; chickenpox, 4; tuberculosis, 1.

As tuberculosis is reported directly to the Secretary State Board of Health and not to the Health Officer, the one case reported does not give an idea of the morbidity.

The tabulated form enclosed gives the number and character of diseases reported each month.

CONTAGIOUS AND INFECTIOUS DISEASES.

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Measles	...	1	4	3	8	13	1	...	...	...	...	...	30
Diphtheria	1	2	...	...	1	...	1	1	...	...	2	2	10
Typhoid fever	...	...	1	...	...	...	2	2	2	4	1	...	12
Mumps	...	...	1	1	2	2	1	1	...	...	...	...	8
Scarlet fever	...	...	...	...	2	...	...	...	...	...	...	1	3
Pertussis	8	...	...	...	...	...	...	...	...	...	...	...	8
Chicken-pox	...	...	...	...	1	1	...	...	...	1	1	...	4
Tuberculosis	...	...	...	1	...	...	...	...	...	...	...	...	1
Total	9	3	6	5	14	16	5	4	2	5	4	3	76

I wish to state in conclusion that many physicians do not report either contagious diseases or births, therefore the records are incomplete and faulty.

Many cases of confinement, especially among the colored race, are attended by so-called midwives, and are never heard of unless a death occurs among their practice.

This may also be said about the medical profession, especially city physicians attending cases in the county.

Respectfully submitted,

HENRY A. NAYLOR, M. D.,
Health Officer.

BALTIMORE COUNTY—*Fourth District—Reisterstown.*

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health.

Dear Doctor: I submit the following report for 1907. Number of deaths reported, 70; births, 57.

Contagious diseases reported: Typhoid fever, 8; scarlet fever, 13; diphtheria, 4; measles, 105.

A few complaints of nuisances have been received.

Respectfully submitted,

H. M. SLADE, M. D.,
Health Officer.

BALTIMORE COUNTY—*Fifth District.*

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

I can give you a synopsis of the work performed by me for 1907: Burial permits, 21; birth cards (about) 30; fumigation, seven houses and two schoolhouses; vaccinations, 11; reports of infectious diseases, 14.

If we had blank books for these records it seems it would be more satisfactory and convenient.

Respectfully submitted,

B. F. PRICE, M. D.
Health Officer.

BALTIMORE COUNTY—*Sixth District.*

FREELAND, March 4, 1908.

DR. M. L. PRICE,
Secretary State Board of Health.

Dear Doctor: I hereby submit my report for Sixth Election District of Baltimore county for the year 1907. During the year 24 burial permits have been issued. In every instance I have fumigated houses where contagious diseases were reported. The reports on births are imperfect, but a decided improvement on last year. We have had an epidemic of measles of a mild type.

The public is being educated in the new law for tuberculosis, and I think a short time will demonstrate the great advantages to be gained by following the rules as prescribed by the State Board of Health.

The successful administration of antitoxin in several cases of diphtheria has removed to a great extent the sentiment against its use. The water supply of our district is abundant and is above the general average as to purity.

Reports from contagious diseases are imperfect, owing to ignorance of the law.

Our school children should use individual drinking cups as fast as we can persuade our teachers and people to adopt them. All cultures submited to our State bacteriologist have been cheerfully and satisfactorily reported. Our schoolhouses should be regularly fumigated and closets disinfected.

Births, 1906.—Females, 17; males, 13; total, 30. Deaths—Females, 9; males, 15; total, 24.

Number deaths, 24 white.

Females—Causes—Tuberculosis, 1; cancer, 2; heart disease, 2; senility, 2; ilio-colitis, 1; stomach disease, 1; total, 9.

Males—Tuberculosis, 1; heart disease, 4; paralysis, 1; tonsilitis, 1; senility, 1; Bright's disease, 1; cholera infantum, 1; cystitis, 1; apoplexy, 3; found dead in bed, 1; total, 15.

Respectfully submitted,
JAMES S. BALDWIN, M. D.,
Health Officer.

BALTIMORE COUNTY—*Seventh District.*

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

A report of infectious and contagious diseases was made each month, as requested, to the State Board of Health of Maryland. An increase in the number of typhoid fever cases over 1906 was due to the wet season. All cases on water shed were reported to Baltimore City Water Department and source of infection was due in each case to impure water.

Diphtheria—Increase in number of cases due to the unusual number of children with tonsilitis and pharyngitis, as houses of patients were found to be in a filthy condition. All rooms occupied by patients were fumigated and disease did not spread beyond the family, as cases were widely scattered. Mortality, two. Whooping-Cough—Decrease in number. Pulmonary Tuberculosis—About the same number of deaths; decrease in acute and increase in chronic cases of long standing. Rooms occupied were fumigated. Scarlet Fever—No cases reported. A few cases of mumps were reported. No smallpox scare occurred during 1907.

Sanitary conditions improved. The people are more willing to comply with the laws and seem anxious to prevent the spread of all diseases.

E. W. HEYDE, M. D.,
Health Officer.
Parkton, Md.

BALTIMORE COUNTY—*Eighth District.*

T. ROSS PAYNE, M. D., Heath Officer. No report.

BALTIMORE COUNTY—*Ninth District.*

R. C. MASSENBURG, M. D., Health Officer. No report.

BALTIMORE COUNTY—*Tenth District.*

MANOR GLEN, February 26, 1908.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

Dear Doctor: I herewith enclose a report for the year ending December 31, 1907, of the Tenth District of Baltimore county, and I hope it will be satisfactory. No special report is needed in regard to vaccination, no small-pox cases occurring in this district, and the vaccinations carried on in the usual manner. In all cases of phthisis the rooms were fumigated following the death or removal of patients, and prophylactic supplies were distributed whenever indicated.

I am inclined to think that some of the births must have been sent in through health officers of other districts.

Deaths—Total number, 18; white 11; colored, 7. Chronic bronchitis, 1, 69 years; apoplexy, 1, 86 years; broncho-pneumonia, 1, not stated, about 70 years; pulmonary congestion, 1, 65 years; hypertrophy of heart, 1, 40 years; paralysis, 2, 67 and 76 years; convulsions (teething), 1, 10 months; phthisis, 1; 31 years; unknown cause (no medical attendant), 1, 1 year; marasmus, 2, 6 months and 5 months; dropsy, 1, 63 years; cancer of liver, 1, 67 years; cancer of stomach, 1, 74 years; cerebral hemorrhage, 1, 77 years; grip, 1, 75 years; tuberculosis, 1, 68 years.

Births—Only two are reported; white, 1, male; colored, 1, female.

A permit was issued for the disinterment of the body of Louise Sudler and reburial in a different lot at the Monkton Methodist Episcopal Cemetery; also the same for Cecilia Scott Bosley and Herbert R. Bosley, same time and place.

One transportation certificate was issued for the transportation of the body of Ellen Kelly from Phœnix to Parkton, on the Northern Central Railroad, for burial at the latter point.

Yours truly,

THOMAS H. EMORY, M. D.,
Health Officer Tenth District.

BALTIMORE COUNTY —*Eleventh District.*

SANITARY OFFICER, ELEVENTH DISTRICT.

Fork, Md.

DR. MARSHALL LANGTON PRICE,
Secretary State Board of Health.

Dear Sir: During 1907 I issued 51 permits to bury and recorded 20 births. In one family, the children of Joseph Blacklock, three had scarlet fever. This house was disinfected promptly and no other cases occurred. Three persons died of tuberculosis—two intestinal and one pulmonary. These three houses were disinfected. There were no other cases of infectious or contagious diseases. In the Eleventh District of Baltimore County, during 1907, only one nuisance was reported; that was corrected. It is impossible to get returns of births, although physicians are appealed to. The health officer begs to thank you for your very prompt response to all calls upon the State Board for supplies whenever required. The state chemist has on several occassions examined suspected water and has always made prompt and thorough reports.

Respectfully submitted,

JAMES F. H. GORSUCH,
Sanitary Officer Eleventh District Baltimore County.

"Error." I should have reported "Diphtheria" in the house of Joseph Dryer, postmaster at Lorely, Baltimore county, 11th district. This occurred in August, 1907. Prompt measures were taken; the postoffice was quarantined and disinfected. No other cases occurred.

Respectfully,

J. F. H. GORSUCH, M. D.

BALTIMORE COUNTY—*Twelfth District.*

DR. W. E. MCCLANAHAN, Health Officer. No report.

BALTIMORE COUNTY—*Thirteenth District.*

DR. FRANK H. RUHL, Health Officer. No report.

Baltimore County—*Fourteenth District.*

Dr. W. D. Corse, Health Officer. No report.

Baltimore County—*Fifteenth District.*

Middle River, Md., February 24, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I herewith submit my report for the year 1907. Deaths reported, 145; white, 107, colored, 38. Births reported, 69; white, 57; colored, 12. Disinfection and vaccination have been done when necessary. General health of the district has been good. Less typhoid fever than usual.

Yours very truly,
John W. Harrison, M. D.,
Sanitary Officer Fifteenth District Baltimore County.

CALVERT COUNTY.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I herewith submit my annual report for the year 1907. Births—White, male, 67; female, 66. Colored, male, 44; female, 51. Total, 228. Deaths—White, 64; colored, 98. Total, 162.

Causes of Death—Valvular disease of heart, 10; tetanus, 1; general debility, 11; still-born, 9; senile dementia, 5; lobar pneumonia, 18; premature birth, 6; coma, 1; broncho-pneumonia, 3; inanition, 5; gangrene, 1; tuberculosis, 15; pernicious fever, 1; Bright's disease, 5; intracranial hemorrhage, 2; congenital deformity, 1; puerperal eclampsia, 3; dropsy, 1; asthma, 1; cancer, 1; apoplexy, 2; accident, 1; influenza, 1; cellulitis, 1; bronchitis, 4; diabetes, 1; colitis, 7; gastritis, 1; uremia, 1; marasmus, 1; epilepsy, 1; enteritis, 8; dysentery, 3; cholera infantum, 2; ptomaine poisoning, 1; convulsions, 2; paralysis, 4; gunshot wound, 1; drowned, 1; typhoid fever, 2; thrush, 2; whooping-cough, 2; softening of brain, 1; congestion of lungs, 1; neuritis, 1; burns, 2; hemorrhage, 2; blood poisoning, 1; unknown causes, 6.

Thirty-five cases typhoid fever, 1 case scarlet fever, 11 cases measles, 7 cases whooping-cough, 10 cases influenza and 15 cases tuberculosis were reported.

Most cases of typhoid under my notice were characteristic, yet of a mild form. The source of infection in most cases was due to bad water. I had premises cleaned and disinfected and ordered analysis of drinking water, which was cheerfully and satisfactorily done by our State Bacteriologist.

Fifteen houses were fumigated for tuberculosis and one for scarlet fever.

Vaccine physicians have visited the public schools quarterly and reported the number of children vaccinated.

Physicians have reported births and deaths promptly. Hygienic conditions in the county are good.

Respectfully submitted,

I. N. King, M. D.

CAROLINE COUNTY.

Dr. Enoch George, Health Officer. No report.

CARROLL COUNTY.

Westminster, Md., August 28, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I beg to submit the following report for the Carroll County Health Board. There is nothing unusual to report for 1907. We have co-operated with the State Board in every instance to the best of our ability.

We have performed our duties as far as our ability and limited means permitted. Fumigation of premises where infectious diseases existed was at times not done, but wherever possible, I either did the fumigating myself or had it done.

The report of deaths has been more complete this year than ever before. There were not many instances in which a death certificate was not properly filled out.

The report of births is not satisfactory. Many births are not reported, and this makes my report of less value from a statistical point of view.

Our sub-registrars are working rather satisfactorily, with two exceptions, and these will be removed in the near future. Our board has not been called on to inspect nuisances of any magnitude except where the State Board was called in to assist. There are two instances where this occurred.

The tannery-distillery nuisance, wherein both the Carroll Oak Tanning Company and the A. McGinnis Distilling Company polluted the North Branch of the Patapsco River by pouring into said stream offal of an offensive and poisonous nature.

The public water supply of Union Bridge was examined in a most thorough manner by County and State Boards, and colon bacillus found.

It is unnecessary for me to go further into these cases, for I am sure, from the opinions given me by you in both instances, that quite sufficient will be said by the State Board itself regarding said investigation.

The following cases of infectious and contagious diseases were reported: Diphtheria, 5; scarlet fever, 5; typhoid fever, 24; whooping-cough, 1; mumps, 4; measles, 17; chicken-pox, 1.

Very truly yours,
Chas. R. Foutz,
Health Officer.

CECIL COUNTY.

North East, Md., March 9, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: During the past year Cecil county has been free from any serious epidemic of contagious disease. There have been reported a few cases of scarlet fever in Port Deposit, Perryville and Woodlawn. Measles has been reported at several points and diphtheria at Elkton, Rising Sun and near Cecilton, and typhoid fever at Rising Sun and Elkton. Wherever contagious diseases appear we endeavor to isolate the cases and use quarantine measures as far as possible, and after recovery of patients the houses are disinfected. Pupils having had contagious or infectious diseases are not allowed to re-enter school until all danger of infecting others is past.

Birth reports are only fairly well made; some of our physicians making none. Have had no report from Drs. Shimp, of Perryville; Jenness, of Rising Sun; Cawley, of Elkton; Richardson, Calvert and Housekeeper, of North East. These reports would be promptly made if the services of the State Bacteriologist should be withheld from delinquents. Contagious diseases have been more prevalent in the hilly section than in the flat, sandy section of the county.

There have been reported no deaths from diphtheria where the antitoxin has been used in the early stages of the disease. The child labor law has been closely observed.

Respectfully,

Theo. A. Worrall, M. D.,

Health Officer.

CHARLES COUNTY.

Waldorf, Md., February 25, 1908.

Marshall Langton Price, M. D.,

Secretary State Board of Health.

Dear Doctor: I herewith hand in the following report for the year 1907. Regardless of certain conditions, Charles county has been mediumly healthy.

Tuberculosis seems to be somewhat on the increase. Owing to the seeming negligence on the part of physicians in reporting this disease, a number of houses have not been disinfected. I have to report 15 cases of typhoid fever, 2 cases of scarlet fever and three cases of diphtheria. Malaria has prevailed to a small extent in certain localities in the county.

The number of births and deaths has been fully reported. Sub-registrars appear to be more alive to their responsibility, and attend to their duties much better.

Very respectfully,

G. Ovelton Monroe, M. D.,

Health Officer for Charles County.

DORCHESTER COUNTY.

Cambridge, Md., March 31, 1908.

Dr. Marshall L. Price,

Secretary State Board of Health.

Dear Sir: In compliance with law I beg to submit my report as health officer of Dorchester county for the year ending

October 1, 1907. During the year I have received and recorded certificates of births as follows: White, 358; colored, 159; total, 517. Deaths.—White, 288; colored, 230; total, 518.

A partial list of deaths by principal diseases is submitted, many difficult or impossible of classification being omitted:

Tuberculosis—White, 29; colored, 31; total, 60. Pneumonia—White, 18; colored, 27; total, 45. Influenza—White, 5; colored, 4; total, 9. Bronchitis—White, 3; colored, 3; total, 6. Pleurisy—White, 2; colored, 1; total, 3. Pertusis—White, 13; colored, 16; total, 29. Measles—White, 15; colored, 5; total, 20. Diphtheria—White, 2. Typhoid Fever—White, 8; colored, 12; total, 20. Bright's Disease—White, 31; colored, 15; total, 46. Valvular Heart Disease—White, 25; colored, 13; total, 38. Entero-Colitis and Cholera Infantum—White, 23; colored, 17; total, 40. Marasmus—White, 14; colored, 8; total, 22. Cancer—White, 6; colored, 4; total, 10. Dysentery—White, 7; colored, 4; total, 11. Paralysis—White, 10; colored, 13; total, 23. Meningitis—White, 5; colored, 2;. total, 7. Apoplexy—White, 4; colored, 1; total, 5.

During the winter and spring of 1906 and 1907 the so-called influenza prevailed in almost epidemic degree in all parts of the county. The disease was of mild form, though in many cases followed by pneumonia, usually of the catarrhal type. I am convinced that in many cases the diagnosis of influenza was in obedience to the popular demand that every case of ordinary cold with even mild fever and muscular pain must be called influenza. From the list of deaths it will be seen that pertussis and measles were responsible for a large mortality. Pertussis was at one period mildly epidemic in the Neck district and measles in Cambridge and vicinity. A number of cases of diphtheria existed during the fall and winter in the Fork district. One death resulted here and one in East New Market. This focus of diphtheria has existed for four or five years, despite every effort to stamp it out. I am glad to report that no new case has occurred in this locality for six months. No case of small-pox has occurred in Dorchester for the past year. To the shame of all, including both the profession and laity, typhoid fever claimed its usual quota of victims. At one period during the summer it was feared that an epidemic threatened in Cambridge. This fear, however, was not realized, for while an alarming number of cases occurred in two weeks of July, the disease, after that period, markedly decreased, and the to-be-expected large number of cases during the fall months did not materialize. Attention is called to the large number of deaths (in proportion to population) occurring in the colored race. In connection with the report on typhoid fever it will be noted that 11 deaths were due to dysentery. This disease was especially noted for length of course, its resistance to treatment and the extremely debilitated condition in which it left its victims. An examination of the list of deaths will show the usual high mortality of the colored race from lung diseases. With a relative population of about 1 to 3, their mortality for tuberculosis, pneumonia and pertussis exceeded that of the white race. I am glad to report a steadily increasing co-operation on the part of most of the physicians of the county in the matter of bacteriological examination of sputum and report of tuberculosis cases. I know of no case where death resulted from tuberculosis that disinfection has not been done. During the year, from October 1, 1905, to October 1, 1906, I received and recored 545 births and 371 deaths. From October 1, 1906, to October 1, 1907, 517 births and 518 deaths were reported.

From this summary it will be seen that the collection of vital statistics is progressing in a satisfactory manner.

Very respectfully,

Guy Steele, M. D.,

Health Officer Dorchester County.

FREDERICK COUNTY.

Dr. C. F. Goodell, Health Officer. No report.

GARRETT COUNTY.

Dr. J. E. Legge, Health Officer. No report.

HARFORD COUNTY.

Forest Hill, Md., February 25, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I present the following report for the year 1907. The vital statistics of Harford county have been sent you monthly, and these cards will show the births and deaths reported to me, recorded in my books and then reported to you. The death reports are complete, owing to the fact that a burial permit is necessary, but the births are far from it, for there are only about half a dozen physicians in the county who report them, and it seems impossible to get them to attend to this duty. The same can be said in regard to the report of the contagious diseases. Those that have been reported to me were promptly reported to the State Board. There have been no epidemics that I can learn of, only a few sporadic cases of scarlet fever, diphtheria and measles.

Very truly yours,

F. LEE HUGHES.

HOWARD COUNTY.

ELLICOTT CITY, MD.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

I have the honor herewith to submit my report for Howard county for the year 1907. It is very incomplete and unsatisfactory, for our physicians have not been as careful to report births and infectious diseases as they should have been.

There was quite an epidemic of typhoid fever in Elkridge during the summer months. Around Ellicott City there was a decided epidemic of measles and varicella during the winter months. We shared the general epidemic of influenza. Our cases were right severe, but fatal only in the aged. There has been the usual number of tuberculosis and a very few scarlatina cases. Of course, the houses of such have been thoroughly fumigated, and when the latter has developed in a school I have closed same and thoroughly fumigated. In this way we may have escaped a more serious condition.

There have been 292 births reported and 284 deaths.

Very respectfully,

L. GILLIS OWINGS, M. D.,
Health Officer Howard County.

KENT COUNTY.

DR. H. G. SIMPERS, Health Officer. No report.

MONTGOMERY COUNTY.

Kensington, Md., December, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I have the honor to submit herewith my report for the year ending October 31, 1907.

There have been reported to me during the past year 488 births. Of these, 370 were white and 118 colored. During the same period 212 white and 137 colored, a total of 349 deaths, were reported. The principal causes of death were tuberculosis, 65; 25 white and 40 colored; pneumonia, 45; of these 24 were white and 21 colored; typhoid 7 and cancer 11.

It is interesting to note that nearly one-third of the deaths among negroes were due to tuberculosis, and if to this we add the deaths due to pneumonia, we find that nearly 50% of deaths among negroes were caused by affections of the lungs.

The deaths due to typhoid fever were only 7, as compared with 17 last year.

On December 10, 1906, I disinfected Forest Glen school on account of diphtheria. On March 28, 1907, closed and disinfected Kensington public school on account of scarlet fever. May 10th visited Glen Echo and found nuisance due to defective sewer; ordered same abated. In June, at the request of the Chevy Chase Association, took up the matter of inspection of Montgomery county dairies with Dr. Marvin, of the Bureau of Animal Industry, but owing to scarcity of men nothing was done by him. I desire to again urge that the State inspect the milk supply of the counties. On August 7 inspected cesspool at Washington Grove and ordered same put in a sanitary condition. August 8 complaint was made of cesspool at Somerset; wrote to Dr. Griffin, local health officer, who promised to abate the nuisance. August 16 Dr. Haddox informed me of an outbreak of diphtheria at Emory Grove. I visited the settlement with him and found there had been one death and one new case, and that 42 negroes had been exposed to the contagion. I advised Dr. Haddox to use antitoxin on all who had been exposed, which he did, with the result that the disease was at once stamped out. August 21 visited Silver Spring and ordered stagnant pool of water drained. September 21, on complaint, visited the almshouse and inspected the same.

There have been fewer cases than usual of typhoid fever. There have been mild epidemics of chicken-pox, whooping-cough and measles. Births, deaths and contagious diseases are now reported promptly by most of the physicians of the county, and all premises occupied by a person suffering with tuberculosis, when vacated, are thoroughly disinfected.

Respectfully submitted,

William L. Lewis,

Health Officer Montgomery County.

PRINCE GEORGE'S COUNTY.

Dr. John E. Sansbury, Health Officer. No report.

QUEEN ANNE'S COUNTY.

February 27, 1908.

Dr. Marshall L. Price,

Secretary State Board of Health.

Dear Doctor: The following is my report for the year ending December 31, 1907: Number of births recorded, 214, including 21 still-births. Number of deaths, 252; the chief causes being tuberculosis, 26; organic heart disease, 24; pneumonia, 17; contagious and infectious diseases, excepting the above mentioned, 34.

Barring typhoid fever, our county has been unusually free of anything of an epidemic character. There have been 53 cases reported, chiefly from Second, Fourth and Fifth Districts. Diphtheria, 10; scarlet fever, 4; measles, 10; whooping-cough, 19 cases.

Respectfully submitted,

Wm. T. Henry,

Health Officer for Queen Anne's County.

SOMERSET COUNTY.

Dr. T. Jacob Smith, Health Officer. No report.

ST. MARY'S COUNTY.

Dr. Thomas Lynch, Health Officer. No report.

TALBOT COUNTY.

March 18, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

My Dear Sir: In making my report as Health Officer for Talbot county for the year ending December 31, 1907, I can only say that the health of the county has been fairly good during the year.

No epidemics of any kind during the year, and very few infectious or contagious diseases reported. The deaths from all causes, including still-births, during the year, were 344, as against 323 the year before. Of these 40 died of tuberculosis; 28 of heart disease; 28 of Bright's disease; 26 of apoplexy and paralysis; 21 of pneumonia; 15 of cancer; 14 of typhoid fever; 11 of bronchitis; 2 of diphtheria; 1 of measles and 1 of whooping-cough. The most of those who died of tuberculosis, pneumonia and typhoid fever were negroes, and most of the pneumonias were sequela of la grippe; the other deaths were from numerous causes, such as happen in all communities, a very large number being from old age or still-birth.

The births reported during the year were 240. I cannot get reports from the midwives in distant parts of the county, and have trouble in getting them from some of the physicians.

I do not think there has been as much typhoid fever in the county during the year as usual, and no more cases of pulmonary tuberculosis than before. Our physicians are using the supplies, and while I have had no reports from them, from what I have heard from those using the supplies, think they are doing much good.

I have heard little or no complaint during the year of the supply of drinking water throughout the county.

The crab and tomato factories gave me a little extra work during the summer on account of the way they were disposing of their offal, but I soon got them in proper form.

The health of the county at this writing is particularly good.

Respectfully,

E. R. Tripps,
Health Officer.

WASHINGTON COUNTY.

DR. J. E. PITSNOGLE, Health Officer. No report.

WICOMICO COUNTY.

SALISBURY, MD., 1907.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

The following is the health report of Wicomico county for the year 1907: Typhoid fever, 138 cases, 16 deaths; diphtheria, 11 cases, 1 death; pneumonia, 83 cases, 15 deaths; chicken-pox, 67 cases, 0 deaths; mumps, 110 cases, 0 deaths; scarlet fever, 27 cases, 0 deaths; measles, 73 cases, 0 deaths; whooping-cough, 93 cases, 9 deaths; tuberculosis, 39 deaths. Births, 259; deaths, 265.

C. R. TRUITT, M. D.

WORCESTER COUNTY.

DR. PAUL JONES, Health Officer. No report.

1907.

LIST OF COUNTY HEALTH OFFICERS.

Allegany	Dr. Chas. H. Brace	Cumberland.
Anne Arundel	Dr. J. J. Murphy	Annapolis.
Baltimore County:—	Dr. Chas. H. Brooke	Brooklyn.
1st District	Dr. Arthur H. Mann, Jr.	Catonsville.
2d District	Dr. H. F. Shipley	Granite.
3d District	Dr. Henry A. Naylor	Pikesville.
4th District	Dr. Harry M. Slade	Reisterstown.
5th District	Dr. B. F. Price	Mt. Carmel.
6th District	Dr Joseph S. Baldwin	Freeland.
7th District	Dr. E. W. Heyde	Parkton.
8th District	Dr. T. Ross Payne	Corbett.
9th District	Dr. R. C. Massenburg	Towson.
10th District	Dr. J. T. Payne,	Shawsville.
11th District	Dr. Jas. F. H. Gorsuch	Fork.
12th District	Dr. W. C. McClanahan	Highlandtown.
13th District	Dr. Frank H. Ruhl	Lansdowne.
14th District	Dr. Jos. B. Webster	Raspeburg.
15th District	Dr. John W. Harrison	Middle River.
Calvert	Dr. Estep Paddy	Parran.
Caroline	Dr. Enoch George	Denton.
Carroll	Dr. Charles R. Foutz	Westminster.
Cecil	Dr. Arthur Mitchell	Elkton.
Charles	Dr. G. O. Monroe	Waldorf.
Dorchester	Dr. Guy Steele	Cambridge.
Frederick	Dr. C. F. Goodell	Frederick.
Garrett	Dr. John E. Legge	Oakland.
Harford	Dr. W. B. Kirk	Darlington.
Howard	Dr. L. Gillis Owings	Ellicott City.
Kent	Dr. Harry G. Simpers	Chestertown.
Montgomery	Dr. C. H. Mannar	Rockville.
Prince George's	Dr. John E. Sansbury	Forestville.
Queen Anne's	Dr. A. E. Landers	Crumpton.
Somerset	Dr. T. Jacob Smith	Princess Anne.
St. Mary's	Dr. Thomas Lynch	Leonardtown.
Talbot	Dr. E. R. Trippe	Easton.
Washington	Dr. J. E. Pitsnogle	Hagerstown.
Wicomico	Dr. Chas. R. Truitt	Salisbury.
Worcester	Dr. Paul Jones	Snow Hill.

Reports of Town Health Officers.

ABERDEEN.

Aberdeen, Md., February 29, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

I herewith submit my report for year ending December 31, 1907.

Deaths reported, 5, as follows: Heart disease, 2; pneumonia, 1; cancer prostate gland, 1; brain softening, 1. All were white; 3 females and 2 males.

Births reported 9, as follows, all white: 6 male, 3 female, one of which was still-born.

Typhoid fever, 1 case, white, aged 18, single. Scarlet fever, 2 cases, both white, male and female. Sanitary conditions good in Aberdeen.

Respectfully,
Chas. H. Kriete, M. D.,
Health Officer for Aberdeen, Md.

ANNAPOLIS.

Dr. Wm. S. Welch, Health Officer. No report.

BRUNSWICK.

Brunswick, Md., February 24, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: In making my report for the year 1907 there isn't much to say outside of giving statistics, except the prevalence of typhoid fever the latter part of the year and extending over into this year, December having 8 cases and January 14. This increase can be traced, I think, to an impure water supply. Water is pumped into two large tanks on the hill from the Potomac River, and nearly half the town use this water. These tubs have not been cleaned for several years. The same thing occurred at that time, and they were ordered cleaned out, with good results. The people have been warned not to use this water without boiling, and the tubs will be cleaned again in a few days.

As no cases have been reported at all this month, I trust we will be free of it for a time. All cases of typhoid fever, diphtheria and scarlet fever are reported, but think many cases of whooping-cough, measles, mumps and chicken-pox are not. I have taken the matter up with the local physicians and hope the present year will be more fully reported.

Births reported, 145; still-births, 2; deaths, 56.

Cause of Death—Alcholism, 1; accident, 7; acute indigestion, 1; acute toxæmia, 1; acute enteritis, 2; anæmia, 1; angina pectoris, 1; cancer of liver, 1; cancer of uterus, 1; cancer of pancreas, 1; cholera infantum, 3; cerebral abscess, 1; cerebral hemorrhage, 3; drowned, 2; found dead, 1; gastric ulcer, 1; heart failure, 1; inanition, 4; la grippe, 1; meningitis, 4; organic heart, 2; paralysis, 2; pneumonia, 6; rheumatism, 1; typhoid fever, 4; tuberculosis, 2; whooping-cough, 1.

Contagious diseases reported: Diphtheria, 3; whooping-cough, 1; typhoid fever, 27; measles, 27; chicken-pox, 2.

Very truly,

LEVIN WEST,

Local Health Officer.

CAMBRIDGE.

DR. J. C. TRAVERS, Health Officer. No report.

CUMBERLAND.

DR. C. H. BRACE, Health Officer. No report.

EASTON.

DR. PHILLIP LEE TRAVERS, Health Officer. No report.

FREDERICK CITY.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: Below please find my report of the vital and mortuary statistics for the year 1907:

Annual Report of the Health Department of Frederick for the year 1907.

Number of deaths, 230; number of births reported, 122; white 113; colored, 9; males, 63; females, 59. Deaths, white, 169; colored, 61; males, 112; females, 118. Still-born, 5; under 1 year, 46; 1 to 10, 14; 10 to 20, 8; 20 to 30, 10; 30 to 40, 13; 40 to 50, 19; 50 to 60, 22; 60 to 70, 28; 70 to 80, 35; 80 to 90, 25, over 90 years, 6.

Deaths resulted from the following diseases, viz: Abnormal parturition, 2; anæmia, 1; angina pectoris, 1; abscess of liver, 1; apoplexy, 5; appendicitis, 1; arterio sclerosis, 7; Basedow's disease, 1; bronchitis, 5; carcinoma, 5; cerebral softening, 2; cholera infantum, 6; croup, 1; cystitis, 1; diabetes mellitus, 3; diphtheria, 3; entero-colitis, 9; epilepsy, 2; extra-uterine pregnancy, 1; gall stones, 1; heart disease, valvular, 12; heart disease, organic, 15; icterus, 1; intussusception of bowel, 1; la grippe, 2; marasmus, 11; meningitis, 1; myelitis, 1; nephritis, 16; pneumonia, 17; pertussis, 5; peritonitis, 1; premature birth, 8; rheumatism, 2; senile debility, 27; syphilis, 1; sciatica, 1; septicæmia, 3; trismus neonatorum, 5; tuberculosis, 19; typhoid fever, 5. Violence—Suicide, 3; accidental, 8; homicide, 1.

The large mortality of children under 1 year, I firmly believe, is due to bad sanitary conditions, due chiefly to surface sewerage, and also that we have no law which privileges us to regulate our milk supply. The large percentage of deaths during the past year due to tuberculosis, representing over 8 per cent. of entire mortality for the year, and 0.19-100 of 1 per cent. of the population of our city, should be all the evidence necessary that, in this particular disease, the laws governing the deportment of persons afflicted with tuberculosis can not be made too stringent. While they are to be pitied and protected, at the same time they should be made to realize that any laxity or indifference on their part as to the strictest observance of the laws of "Public Health" relative to the prevention and spreading of contagious and infectious diseases is anything but conducive, not only to their individual welfare, but that they are helping to infect and germinate conditions that will, in a few years, cause as much devastation to the human race in this country as the plagues are doing in the Oriental countries. Therefore, it is the paramount duty of the public in general, and especially those who appreciate the improved methods of proper hygiene and sanitation, to see that such laws are enacted and enforced as will eliminate our present menaces, thereby rendering great good to the present and future welfare of our city. We have suffered from inadequate health regulations due solely to the antagonism to any proposed measures that tend to improve the sanitary conditions of our city. Those who are opposed to such measures are, I believe, honest in their antagonism, but, I regret to say, ignorant of the benefits that such measures will produce.

Our morbidity during the past year was about normal compared with other years. We had a mild outbreak of diphtheria, which, thanks to antitoxin, was held in check and rapidly abated. The only deaths that occurred was where antitoxin was not used or used too late. In all, about 45 cases were reported during the year, and of these three deaths only occurred. Typhoid fever was very prevalent during late summer and early fall, but not epidemic at any time. The majority of cases were of foreign infection. Scarlet fever less than usual. Measles, exceptionally few cases reported. Whooping-cough and chicken-pox, about their normal quota.

There is a laxity or indifference on the part of some physicians as to reporting births and contagious and infectious diseases, as prescribed by the statutes. I trust that they appreciate what the law is relative to the neglect of the same, and will endeavor during the present year to observe it more closely. As to the householder or parent, the law is just as applicable, relative to the reporting of births and contagious diseases, as to the physician. On account of this neglect, our births do not make a satisfactory showing; our percentage is only a few more than one-half of the deaths reported. I trust that the sanitary measures that have been enacted and those proposed will receive the commendation of the majority of our citizens, so that next year's "Vital and Mortuary" report will reflect credit upon our city as being progressive from all viewpoints.

Respectfully submitted,

Ira J. McCurdy,
Health Officer Frederick City.

FROSTBURG.

Dr. J. Marshall Price, Health Officer. No report.

GARRETT PARK.

Dr. Eugene Jones, Health Officer. No report.

HAVRE DE GRACE.

Dr. I. J. Woodward, Health Officer. No report.

KENSINGTON.

Dr. Wm. L. Lewis, Health Officer. No report.

LAUREL.

Dr. W. Franklin Taylor, Health Officer. No report.

LONACONING.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Doctor: I have the honor to submit herewith the annual report of the Lonaconing Board of Health. Scarlet fever has been the prevailing contagious disease, there having been from 2 to 7 cases every month, except March, when no contagious diseases were reported. There have been reported for the year 46 cases of scarlet fever, 11 of typhoid fever, 10 of diphtheria, 2 of measles and 20 of chicken-pox. There have been 82 deaths; 12 were due to bronchitis; 7 each accident, apoplexy and pneumonia; 6 each Bright's disease and diarrheal disease of infants; 5 premature births; 4 each asphyxia from overlying and consumption; 3 each rheumatism, cancer, scarlet fever; 2 each heart failure, meningitis, appendicitis, old age; 1 each anæmia, alcoholism, convulsions, epilepsy, disease of liver, heart disease, erysipelas. There were 11 between 65 and 80 years of age and 4 over 80 years. There were 170 births, all white; 81 males,

Respectfully,

J. O. Bullock, M. D.,
Health Officer.

OLNEY DISTRICT.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

Dear Doctor: In a review of the work done by the Olney District Board of Health from November 1 to October 31, 1907, the following might be mentioned: To protect our citizens from contagious and infectious diseases by quarantining and disinfecting premises where it occurs, and to stand always on the watch tower, and be ever ready to conserve the health of the public by abating nuisances, examining water that the public uses, which is done through the State Board of Health; investigating causes of death where no physician was in attendance. All the scholars attending the public schools, as far as known, have been vaccinated, and only one instance where a parent refused to have it done and the pupil had to leave school, but it is a source of congratulation that an overwhelming majority of our enlightened citizens see the great importance of having it done, and thereby staying the ravages of one of the most filthy and dangerous diseases that can afflict mankind. Sending in promptly to the Secretary of the State Board of Health returns of births and deaths and always trying to uphold and sustain the health laws, which were passed and made laws for our protection. These things have been done by our board during the past year. We have been exposed, and many have suffered from the epidemic of grippe which has been so prevalent in our state. Chicken-pox has also assumed an epidemic character in a few localities. More than an average number of cases of typhoid fever has prevailed. Many cases of measles of a severe type visited the district, and the unusual sight of 11 cases in one family down with this disease at the same time.

The following are the number of births and deaths reported for the year, with causes of death: Births—White, 17; colored, 52. Deaths—White, 18; colored, 25. Causes of Death—Premature birth, 1; pneumonia, 1; tuberculosis, 4; typhoid fever, 2; diphtheria, 1; whooping-cough, 2; nephritis, 5; hydrocephalus, 1; heart disease, 2; abscess of lung, 1; marasmus, 2; apoplexy, 1; meningitis, 1; opium poisoning, 1; enlargement of liver, 1; measles, 1; convulsions, 4; congestion of lungs, 1; senility, 1; sclerosis of liver, 1; still-born, 1; infanticide, 1; cholera infantum, 5; ptomaine poisoning, 1; chronic pleuritis, 1.

Respectfully submitted,

CHAS. FARQUHAR, M. D.,
Health Officer Olney District.

POCOMOKE CITY.

Dr. H. N. Willis, Health Officer. No report.

TAKOMA PARK.

Mr. H. E. Rogers, Health Officer. No report.

TAKOMA PARK.

Takoma Park, Md., January 23, 1908.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Sir: As registrar of vital statistics for the town of Takoma Park, Md., I have the honor to report for the year January 1 to December 31, 1907, as follows: Number of births, 11, white; number of deaths, 4, white; number of marriages, 10, white. During the year there was no case of typhoid fever, tuberculosis nor of any serious infectious or contagious disease. Two of the deaths were from organic heart trouble (ages 69 and 70); one female, age 67, internal cancer, one a female child (2½ years) convulsions induced by grippe.

The sanitary conditions of the town are excellent. Public water and sewer service.

Very truly,
L. M. Mooers,
Town Registrar.

LIST OF TOWN HEALTH OFFICERS.

Aberdeen	Dr. Charles R. Kriete.
Annapolis	Dr. Wm. S. Welch.
Brunswick	Dr. Levin West.
Cambridge	Dr. J. C. Travers.
Cumberland	Dr. Charles H. Brace.
Easton	Dr. Philip Lee Travers.
Frederick	Dr. Ira J. McCurdy.
Frostburg	Dr. J. Marshall Price.
Garrett Park—Kensington	Dr. Eugene Jones
Havre de Grace	Dr. I. Z. Woodward.
Kensington	Dr. Wm. L. Lewis
Olney	Dr. Chas. Farquhar.
Lonaconing	Dr. Jas O. Bullock
Laurel	Dr. Franklin Taylor
Pocomoke City	Dr. H. N. Willis.
Tacoma Park	Mr. H. E. Rogers
Tacoma Park	Mr. L. M. Mooers. Sub. Reg.

Reports of Sanitary Inspections, 1907.

POLLUTION OF THE NORTH BRANCH OF THE PATAPSCO RIVER.

An investigation of this alleged pollution was made with the County Health Officer, Dr. Charles R. Foutz, on May 4th, 1907. After careful examination of specimens taken from the stream, both chemical and bacteriological, as well as an inspection of the banks of the stream from the tannery down to Carrollton, the following opinion was furnished Dr. Foutz on May 6th:

May 6, 1907.

Dr. Chas. R. Foutz,
Health Officer of Carroll County, Westminster, Md.

Dear Doctor Foutz: I am sending herewith an opinion upon the alleged pollution of the North Branch of the Patapsco river by the Carroll Oak Tanning Co. and the A. McGinnis Distilling Co.

From the action and petition previously presented to you, it appears that relief is asked for upon the following grounds:

(1) The destruction of fish in the waters of the North Branch of the Patapsco river.

(2) Nuisance caused to persons living upon the banks of the said river, by the existence of offensive or unwholesome odors caused by the drainage of said Carroll Oak Tanning Co. and A. McGinnis Co.

(3) Pollution of the waters of the said North Branch of the Patapsco river by the Carroll Oak Tanning Co. and A. McGinnis Co., whereby such waters are rendered unfit for drinking and domestic purposes.

Upon the first point, I would advise that the sanitary authorities of this State have no jurisdiction, and for this and other reasons specified in my interview with you, consideration of this point should be ignored by the State Board of Health, and the Health Board of Carroll county.

Upon the second point, the petitioners may seek relief either by civil suit in equity or by petition to the local or State

Board of Health for abatement of a nuisance in accordance with the provisions of Sects. 74, 75, 76, 77, of Art. 43, Code of Public General Laws of Maryland, 1904.

The most important statute of which the violation is alleged is Sect. 429, of Article 27, Code of Public General Laws of Maryland (1904). This Section is as follows:

"Sect. 429. If any person shall put, or cause to be placed, any dead animal, or part of the carcass of any dead animal, or any decayed or filthy animal or vegetable matter, into any stream, or the tributary of any stream, well, spring, reservoir, pond or other source from which water or ice is drawn, taken or used for drinking or domestic purposes, or shall knowingly suffer any sewage, washings or other offensive matters from any privy, cesspool, factory, trades establishment, slaughterhouse, tannery, or other place, over which he shall have control, to flow therein, or into any drain or pipe communicating therewith, whereby the water supply of any city, town, village, community or household, is fouled or rendered unfit for drinking and domestic purposes, he shall be guilty of a misdemeanor, and shall, upon conviction thereof in a court of competent jurisdiction, be fined not more than two hundred dollars for every such offence; and after reasonable notice, not exceeding fifteen days, from the State Board of Health, or any local sanitary authority, to discontinue the act whereby such water supply is fouled, the further sum of not more than fifty dollars for every day during which the offence is continued."

Proceedings may be had under this Section, either by prosecution in the criminal courts, or by "reasonable notice, not exceeding fifteen days," from the State or local Board of Health to discontinue the act whereby such water supply is fouled.

I.

Upon investigation made with you upon May 4, 1907, I find as regards the Carroll Oak Tanning Co.:

First. That the said firm is a corporation engaged in the tanning of hides and manufacture of leather, situated in proximity to the bank of the North Branch of the Patapsco river.

Second. That the said firm employs in removing the hair from the hides of animals used in the manufacture of leather, tanks containing a solution of lime unslacked or slacked (Ca. $(O. H.)^2$).

Third. That the said firm employs in the process of tanning a solution of white oak bark (Quercus Alba)—the essential principle of which is tannic acid—and a solution of Southern manufacture from chestnut wood of similar nature.

Fourth. That the said firm discharges daily into a small stream communicating with the North Branch of the Patapsco river, at a distance of about 100 yards, the contents of several tanning tanks containing a strong solution of tannic acid, and the contents of several rinsing tanks, containing in solution small quantities of lime and tannic acid.

Fifth. That the said firm discharges at irregular intervals, not less than once monthly, the contents of several tanks containing a solution of lime into a pond or sink, bordering on the said North Branch of the Patapsco river, not now communicating with the said branch excepting during high water.

Sixth. That the said firm discharges daily into the North Branch of the Patapsco river, through the small stream before mentioned, the human excrement derived from closets built over the said small stream and used by all of the employees of said firm.

Seventh. That the said Carroll Ook Tannery Co. has violated Section 429, of Article 27, of the Code of Public General Laws of Maryland, both in causing or permitting discharges of waste materials and in causing or permitting sewage to flow into the North Branch of the Patapsco river, and thereby cause its fouling.

II.

I find as regards the A. McGinnis Co.:

First. That the said firm is a corporation situated upon the bank of the North Branch of the Patapsco river near Carrollton, Carroll Co., and that the said firm is engaged in the manufacture of Rye Whiskey.

Second. That the said firm in the manufacture of Rye Whiskey causes a mash of Rye and water, with yeast (or some other ferment), to ferment in large tanks or vats, to produce alcohol and other extractives, giving the whiskey its essential flavor and properties.

Third. That the said firm causes its "Mash" when fermented to be distilled at a low temperature to produce whiskey.

Fourth. That the said firm causes the residium of the "mash" remaining after distillation to discharge through an open drain into the waters of the North Branch of the Patapsco river, a distance of about one hundred yards.

Fifth. That the waste material discharged from the drain of the said firm has a sour, penetrating and disagreeable odor.

Sixth. That the waters of the North Branch of the Patapsco river have, at Carrollton, and some distance above and below, a sour, penetrating and disagreeable odor.

Seventh. That the said A. McGinnis Co. has violated the provisions of Section 429, of Article 43, by permitting offensive matters to flow from the distillery of the said company into the North Branch of the Patapsco river, thereby causing pollution of the stream.

III.

I find as regards the pollution, individual and several, produced by both companies:

First. That the waters of the North Branch of the Patapsco river are colored dark from a point a short distance below the Carroll Oak Tannery down to the common boundary of Carroll and Baltimore counties.

Second. That the waters of the North Branch of the Patapsco river have continuously, or at intervals, an offensive odor from a point a short distance below the plant of the A. McGinnis Co. to and below the town of Carrollton.

Third. That the waters of the North Branch of the Patapsco river contain between the points specified in Section 2, a growth of the nature of an algæ of penetrating and offensive odor.

Fourth. That the waters of the North Branch of the Patapsco river have been habitually used for domestic purposes until they became fouled and polluted and unfit for such domestic purposes.

Fifth. That the nuisance produced involves Carroll and Baltimore counties.

I would withhold any specific opinion upon the several parts played by the Royal Oak Tanning Co. and the A. McGinnis Co. upon the pollution of the North Branch of the Patapsco river, and in the meantime, I would suggest that the persons affected apply to me by petition for action against the alleged pollution, and the matter will be presented by me to the Board at its next regular monthly meeting in June.

Very truly yours,

MARSHALL LANGTON PRICE,

Secretary.

In accordance with the decision of the Secretary, as set forth in this opinion, a petition signed by 124 residents of the towns of Carrollton, Patapsco and Lawndale, was presented to the Secretary, and considered at the regular June meeting of the Board, June 12th, 1907.

The Board after carefully hearing evidence from all of those concerned decided that a pollution of the stream existed which should be abated, and passed an order to this effect.

Accordingly, restraining orders were issued by the Secretary, June 13th, 1907, against the A. McGinnis Distilling Company, as follows:

Office of the State Board of Health,
10 South Street, Baltimore.

June 13th, 1907.

At a meeting of the State Board of Health held June 12th, 1907, the A. McGinnis Company, a body corporate, was found to have polluted the North Branch of the Patapsco river, by causing or permitting waste material from the mash used in the preparation of rye whiskey, or other fermented liquor, to flow therein, in violation of Section 429, of Article 27, of the Code of Public General Laws of Maryland.

Therefore, by virtue of the powers vested in me as Secretary and Executive Officer of the State Board of Health, I hereby enjoin C. Paul Duffy, President, and Mr. John T. Mays, Manager, officers of said corporation, and any other officers or any agents, employees or stockholders of said body, against causing, allowing or permitting any of said waste from the said distillery to flow directly or indirectly into the said North Branch of the Patapsco river after the 23rd day of June, 1907, under the penalty provided by Section 429, of Article 27, for the violation of this statute.

Marshall Langton Price,
(Seal.) *Secretary.*

C. Paul Duffy, President.
John T. Mays, Manager.

Restraining orders were issued against the Royal Oak Tanning Company the same day, as follows:

Office of the State Board of Health,
10 South Street, Baltimore.

June 13th, 1907.

At a meeting of the State Board of Health, held June 12th, 1907, the Carroll Oak Tanning Company, a body corporate, was found to have polluted the North Branch of the Patapsco river, by causing or permitting sewage and waste containing lime, to flow therein, in violation of Section 429, of Article 27, of the Code of Public General Laws of Maryland.

Therefore, by virtue of the powers vested in me as Secretary and Executive Officer of the State Board of Health, I hereby enjoin Charles S. Walton, President, C. S. Warren, Secretary, Joseph R. Mardick, Manager, officers of said corporation, and any other officers or any agents, employees or stockholders of said body, against causing, allowing or permitting any sewage, or waste containing lime, to flow directly or indirectly into said North Branch of the Patapsco river after the 23rd day of June, 1907, under the penalty provided by Section 429, of Article 27, for violation of this statute.

Marshall Langton Price,
(Seal.) *Secretary.*

Chas. S. Walton, President.
C. S. Warren, Secretary.
Joseph Mardick, Manager.

The water beginning about one-half mile below the tannery became black from the lime and tan bark discharged from the tannery and continued so for a distance of two or three miles. At the site of the distillery a frothy, white liquid ran into the stream without producing any perceptible change. About a quarter of a mile below this point, however, there was a very perceptible odor, which increased in intensity as we descended the stream. At a pond furnishing power for a flour mill, a number of dead fish were seen on the surface, and at a small town, below, the fungus which we describe appeared in great quantity along the bottom and sides of the river and at the race leading into the flour mill.

The odor along the banks of the stream was perceptible for several hundred feet back and was almost intolerable at the flour mill. The fungus accumulated at this place and had to be removed with a rake or shovel, and there must have been 100 pounds removed daily. In the stream the fungus could be seen adhering to the banks or growing from sticks like sponges. The free filaments gave a beautiful, feathery appearance to the growth when floating in the water. The specimens when removed collapsed in a gelatinous mass and gave forth the most remarkably putrid, acrid and nauseous odor which we have ever experienced.

On July 5th the Secretary visited the tannery and distillery with Dr. Stokes to determine if the orders of the Board had been complied with, and also to further investigate the condition of the stream since the polluting materials had been withdrawn. The Secretary and Dr. Stokes inspected the tannery and distillery and found that the orders of the Board had been complied with. They walked down the stream from tannery to distillery, and took frequent scrapings from the bottom with a long rake. They found that while there were several varieties of fungus growing between the tannery and distillery outlet, they were of the common variety and mostly chlorophyl bearing algæ, without unpleasant odor, excepting a slight fishy smell. Below the distillery outlet the algæ took on an offensive, rancid smell down as far as Carrollton, but the characteristic algæ, with a putrid, acrid and highly offensive odor, had wholly disappeared from a short time after the distillery waste was cut off, the latter having ceased operation about the second week in June.

The disappearance of the algæ was so complete that they were unable to obtain any specimen for examination at Carrollton. Citizens there stated that the nuisance had been abated as far as any offensive odor was concerned.

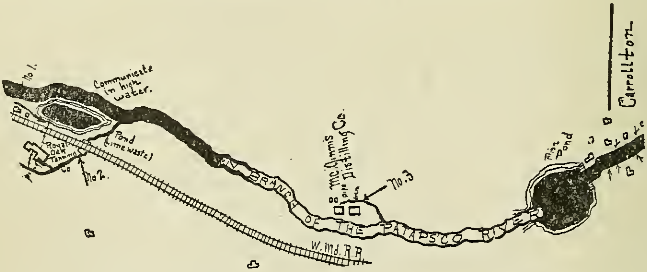


Fig. 1.—Sketch map of the North Branch of the Patapsco river (not drawn to scale), showing the R. Tannery, the M. Distillery and the town of Carrollton. The arrows and numbers indicate where specimens were taken.

Distillery waste is a yellowish-white, opaque liquid with a spirituousor yeasty odor and slightly acid reaction, due to acetic acid. In about twenty-four hours the reaction becomes alkaline. As appears in the analysis, it contains a very large quantity of nitrogen and shows that the organic matter has only partially been exhausted by fermentation. The chemical analysis does not show why this material should be so favorable to fungus growth and particularly to the *Leptomitus lacteus.* Apparently the conditions under which this fungus grows are more or less delicately balanced. Too great or too

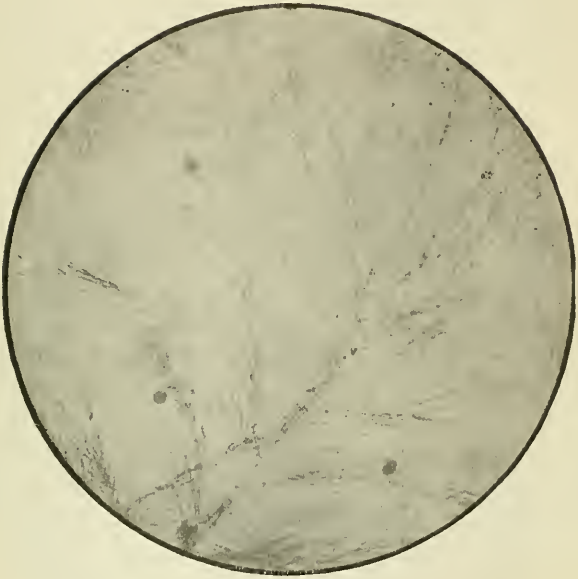


Fig. 4.—The fungus under a low magnification, and the central large stem containing numerous smaller branches is well demonstrated.

ANALYSIS OF SAMPLE MARKED "A. McGINNIS DISTILLING COMPANY."

(All figures expressed in parts per million.)

Color	Yellow
Odor	Spirituous
Total solids	17,990
Ignited or mineral solids	1,896
Volatile and organic solids	16,094
Chlorin	20.5
Nitrogen as free ammonia	8.33
Nitrogen as albuminoid ammonia	18.76

W. B. D. PENNIMAN,

Chemist.

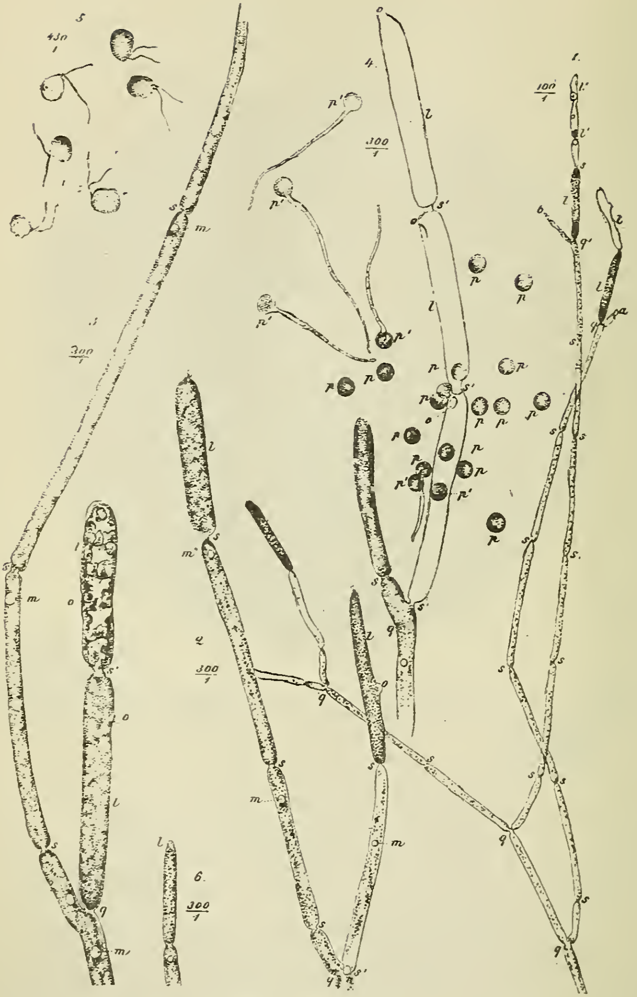


Fig. 2.—Photograph copied from *Jahrbüch. f. Wissenschaftliche Botanik,* vol. ii, 25, showing different conditions of *Saprolegniæ lacteæ.* m, nuclei at the joints; s, the constrictions; p, spore-swarms at rest after evacuation from the Sporangium; p′, young spores producing "Schlanchen" or hyphæ. At e′ (1) a few spores are seen in the sporangium. At s′ (4) the nuclei close the constrictions and form the partition walls of the joints.

little a dilution will apparently prevent its growth. In this particular instance the fungus did not appear until the stream had flowed about one-quarter of a mile beyond the distillery outlet. Since the dilution progressively increases in any stream, we would expect to see the fungus appear in small streams in some part of their course, but, on the other hand, if the waste was discharged at once into a large body of water the dilution would probably be too great to favor the growth of the *Leptomitus*. In a small stream such as this, the only means that could be suggested would be to completely dry and dispose of the waste, or by a septic tank process—carry the fermentation process to a complete stage of decomposition. Attempts to cultivate the fungus have been uniformly unsuccessful, though during June we attained partial success by some experiments carried on at room temperature. Evidently it was necessary in this instance to obtain corroborative evidence that the growth of the *Leptomitus* was dependent on the distillery waste, and not on the discharge from the tannery or a

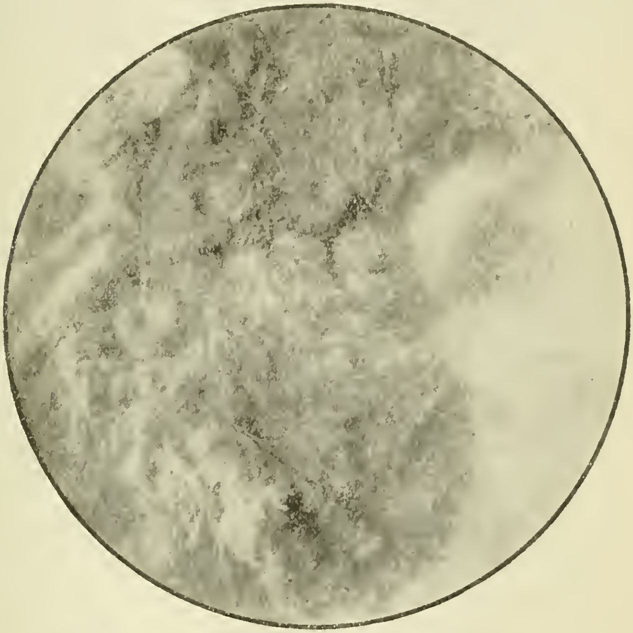


Fig. 3.—Photograph of gross specimen, showing its shaggy, coarse, hair-like appearance.

mixture of the two wastes. Experiments were made with two samples of tannery waste, Specimen 1 and Specimen 2, and with distillery waste, Specimen 3. Dilutions were made in ordinary fruit jars as follows: Tannery Specimen 1, two samples, dilution 1 to 500 and 1 to 5,000; tannery Specimen 2, same dilutions; Distillery Specimen 3, two samples, same dilutions. We then had six jars containing two different kinds of waste, diluted in proportions of 1 to 500 and 1 to 5,000. Six additional samples were then prepared by mixing equal parts of the 1 to 500 distillery waste with tannery Specimen 1 and Specimen 2 separately and with equal parts of the mixture of Specimen 1 and Specimen 2, the samples being in 1 to 500 dilution, and a similar set of samples were prepared in 1 to 5,000 dilution.

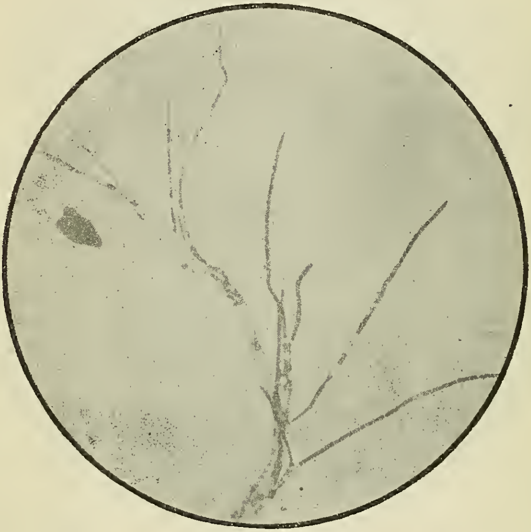


Fig. 5.—This shows a specimen dried and stained by hematoxylin. The dichotomous branching from the parent stem is clearly seen.

A portion of the fungus was removed by the point of a paper knife and washed off by movements of the knife in the fluid. The odor soon disappeared from the jars, excepting a slight leathery odor in those containing tannery waste. At the end of three days the characteristic odor reappeared in the inoculated jar containing the unmixed but diluted distillery waste. This was only plainly perceptible in the 1 to 5,000 dilution, and in this jar evidences of growth could be plainly perceived in new filaments springing off from the original material. None of the other samples containing tannery waste alone or mixed with distillery waste showed any evidences of growth.

It appears, therefore, from this partially successful experiment that a high dilution is necessary, and that the products of the tannery inhibited the fungus. It remains to explain the universal disappearance of the *Leptomitus* when cultivated *in vitro*. Either the fungus exhausts its own nutriment and in a very short time ceases to grow or else, which seems more probable, some of the products of growth are toxic to the fungus, and its reproduction ceases on account of a species of autointoxication. We believe that both of these conditions can be met successfully, and if we are able to secure any more of the fungus we propose to treat it by continuous irrigation with diluted distillery waste, allowing the material constantly to siphon into the jar and overflow. In this way we could reproduce very closely, artificially, the conditions in which the fungus is found in the streams. One of the interesting phases of the joint association of this fungus and distillery waste in streams is the destruction of fish. This generally appears to kill only a certain proportion of fish and not to destroy all of those in the stream. While we have obtained dead fish and subjected them to autopsy, we have been unable to determine the cause of their death. Whether it is due to poisonous products of the fungus or its growth within or on some part of the fish, we have been unable to ascertain, but that it is due to the distillery waste in this instance can scarcely be doubted, as experiments *in vitro* with the tannery waste on living fish have been without result.

Dr. Wm. R. Stokes, bacteriologist, furnishes the following report:

THE SAPROLEGNIÆ.

"According to Pringsheim* the *Saprolegniæ* form a subdivision of the *Algæ*. They are often found in water attached to animal or vegetable materials forming growths radiating from all sides of their host, their straight or branched hyphæ often penetrating deeply into the material, such as a stick or stone. Their protoplasm does not contain any chlorophyl or starch. Pringsheim thinks that they belong to the *Algæ* since they form spore-swarms, and no true moulds do this, and the formation of generative cells and the alternating sexual and asexual generation places them in near relationship to the *Vaucheriæ* and *Conferræ*.

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* Jahrbücher für Wissenschaftliche Botanik, Berlin, 1858, I, 284.

"As mentioned above, the *Saprolegniæ* have a double cycle of development; a sexual and an asexual generation. The asexual growth begins by one of the hyphæ cutting itself off from the main stem by transverse fission and forming the so-called mother cell of the swarm of spores. The protoplasm divides into a large number of spores, which soon escape from the sporangium. Another hypha grows from the emptied spore-sac, and so the growth progresses. The spores are motile and have cilia which propel them through the water.

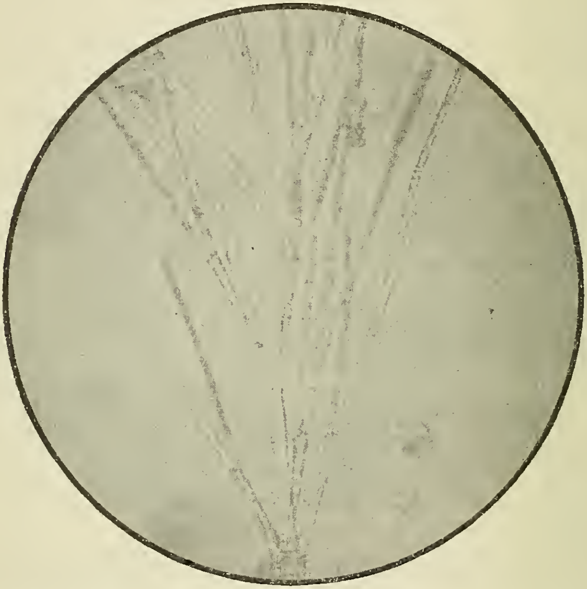

Fig 6.—This shows the branching end filaments when photographed from a fresh specimen.

"The most important part of the sexual apparatus of the *Saprolegniæ* consists in the female sexual organ, or the oögonium, which forms the oöspores. These oögonia are developed from special branches which grow from the sides of the main hyphæ, and are later cut off and form the female organ. Certain clear spots appear in the protoplasm and the wall later is absorbed at these points and these orifices admit the spermatozoa.

"Coincident with the changes just described a gradual separation of the contents of the oögonium takes place, which results in the formation of a number of masses of protoplasm which form the ova ready for fertilization. The protoplasm forms itself into globular shapes which form the daughter cells of the structure. In some of the forms of *Saprolegniæ* branches grow out from the stalk of the oögonium, which grow around and even cling to the outside of the female sexual organ. These branches are called antheridia, and they penetrate the perforations in the wall of the oögonium and probably fertilize the immature ova by means of spermatozoa. These spermatozoa are embedded in the antheridia, surrounded by a mucoid material; after they have entered the protoplasm of the female element they appear as fine refractive bodies which soon mix with the substance of the protoplasm of the female element. Following this act the oöspores are formed, which are the lasting seeds of this species.

"In some species of *Saprolegniæ* such as *Saprolegnia ferox*, these antheridia are not formed, and the spermatozoa are derived from egg-shaped cells which form at the end of hyphæ. A large number of small motile branches which rupture the mother cell becomes free later in the surrounding medium. They have cilia and are spermatozoa derived from these special antheridia. In summing up the characteristics of the *Saprolegniæ* the following résumé is given by Pringsheim:

"'The *Saprolegniæ* are cryptogamic, colorless, parasitic water plants belonging to the division of the *Algæ*. The vegetative parts are formed from a single many-branched mycelium. Many spore-swarms form at the ends of the cut-off hyphæ, which spores have one or two cilia. Oögonia are formed from the thickened ends of short, side branches which contain many openings. Antheridia are single-celled, and are formed by side branches from the stem of the oögonium. These antheridia contain many small rod-like spermatozoa. Oöspores are formed which later grow to hyphæ or form spore-swarms.'

Leptomitus Lacteus.

"The organism which infected the stream is one of the *Saprolegniæ*, and belongs to the genus *Leptomitus*. Dr. Karl F. Kellerman, physiologist in charge in the Bureau of Plant Industry, U. S. Department of Agriculture, to whom we are indebted for a diagnosis, thinks that it is probably the *Lepto-*

mitus lacteus, and a brief description of this organism is therefore in order.

"The *Leptomitus lacteus* was first described by Agardh* in 1860, and later by Pringsheim† more thoroughly. According to this author this plant only occurs in the flowing water of small or large streams, occurring in winter as well as in summer. It forms either small or large masses of a dirty, white material often spread over extensive areas. The filaments are often several inches long, and often cover the surface of the water, as well as every root or branch of a tree or large stone in the water. They form long, floating, slimy masses, resembling wool spread over these various surfaces.

"Under the microscope the plant shows dichotomous branching with slight constrictions which resemble joints. They are not true joints, however, and the entire plant is continuous and unicellular. Either one or several nuclei are often found near these constrictions. In young hyphæ the nucleus is homogeneous, but in old ones it may show several concentric layers. New branches are formed by the growth from the point or end of a branch or by side branches. These younger branches are smaller than the parent branch at first.

"The formation of sporangia is accomplished by a swelling of one of the end hyphæ, its protoplasm increases, and by transverse fission it cuts itself off and forms a complete single cell. This soon forms a sporangium in which the protoplasm begins to heap up in a manner similar to that described above in the other *Saprolegniæ.* This process ends in the formation of motile bodies which form swarms of spores. These spores measure 1/86 of a millimeter in diameter, and have two cilia, and hyphæ soon grow from these spores and thus continue the species.

"The organism is very difficult to cultivate artificially, often dying out several hours after transplantation, but its life may be prolonged by adding insects to the water. Pringsheim could not observe the formation of sexual organs under these conditions. By supplying fresh water frequently he grew the plant for one week. He was never able to find oögonia or antheridia in this fungus. We obtained large quantities of the organism on two separate occasions from the stream, and on microscopic examination they both corresponded in all of their characteristics to *Leptomitus lacteus* as described by Pringsheim.

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* Syst. Alg., p 50, Kützing, Species Alg. p. 155, Dilhoyn's British Confervæ, 1809, Tab. 19.

† Jahrbücher für Wissenschaftliche Botanik, Berlin, 1858, ii, 205.

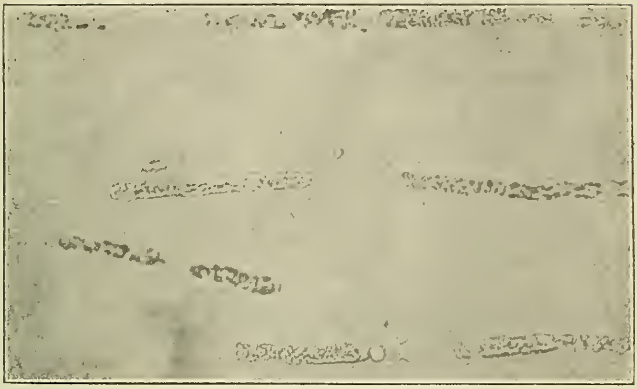

Fig. 7.—Two groups of three spores each, showing the granular protoplasm of the spores.

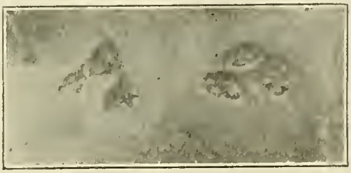

Fig. 8.—This shows the individual hyphæ under the high power. The constriction with the nucleus adjacent is quite apparent, and the granular protoplasm alternating with the clear hyaline contents of the filament is clearly indicated.

"Figure 2 is a photograph of Table XXV from the *Jahrbuch. f. w. Botanik,* showing the excellent drawings of the fungus by Pringsheim. The description at the bottom of the figure describes the plate in detail. The granular protoplasm of the hyphæ is well shown, and the nodes or constrictions are also seen at fairly regular intervals. The round, clear nuclei are usually placed near these constrictions, and the drawing also shows the true dichotomous branching of the mycelium. The spores singly, or in swarms, are clearly depicted, and the beginning of new hyphæ can be seen originating from the single spores. A few of these spores also show cilia, and Pringsheim described active motility of these spores. Figure 3 shows a photograph of the gross specimen as it appears when taken from the stream. The shaggy, coarse appearance of the threads resembles a bushy mass of hair. The specimen when fresh had a most penetrating, offensive odor, and this is still present after having remained about a year in formaldehyde solution.

"Figure 4 is a photomicrograph of the fungus under the low power. A long central stem is seen from which smaller branches grow. These again branch into many terminal filaments. Figure 5 is a photomicrograph of a stained specimen. The fungus was simply dried on a slide and stained by hematoxylin, and it shows dichotomous branchings of the end branches, and also contains large, clear areas without any granular protoplasm. Figure 6 shows the many branching end filaments when photographed from a fresh specimen. Some of these end hyphæ are said to separate from the rest by transverse fission, and form sporangia. The spores form in these sporangia, and later free themselves and become spore-swarms. Figure 7 shows two groups of three spores each. They are rather oval in shape, and contain coarsely granular protoplasm. Figure 8 shows individual hyphæ under the high power. Granular protoplasm alternates with clear areas, and the clear nucleus of one of the hyphæ appears adjacent to one of the constrictions.

"From what has gone before we have concluded that the fungus corresponds in its properties with that described as *Leptomitus lacteus* by Pringsheim."

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American Medical Association, 103 *Dearborn Ave., Chicago.*

WATER SUPPLY OF UNION BRIDGE, CARROLL CO.

Dr. Chas. R. Foutz,

Health Officer of Carroll County, Westminster, Md.

Dear Doctor: I enclose herewith an opinion upon the water supply of Union Bridge, Carroll county. This water supply I inspected with you on September 6th, 1907. A second inspection was made by you with Mr. Mitten on September 12th, 1907, at which time seven chemical and nine bacteriological samples of water were taken, the analyses of which is appended. A sketch diagram is also appended to illustrate the collection, storage, and distribution systems.

1. Situation, Population and Consumption of Water.

Union Bridge is situated about five miles to the west of Westminster, on the Western Maryland Railroad. The greater part of the town lies to the south side of a small branch of the Monocacy river, which rises near Westminster. The town is placed upon the west slope and foot of a hill, rising about 150 feet above the town. Upon the highest part of this slope is the storage reservoir. Water is supplied by the Union Bridge Water Company. Nearly all the houses are piped by the water company—125 in all. Of these houses, 25 are estimated to use both the town water and dug wells. Fifteen houses are estimated to depend upon dug wells alone for their supply. There is no sewage system. The usual privy is a pervious dirt pit. The population of the town is estimated at 800 persons. About 40,000 gallons of water are distributed daily, which gives for the whole population, including those not using the town supply, a per capita consumption of about 50 gallons.

Water Supply.

A. *Collection.* The water supply is derived from five bored wells at the foot of the hill, and at the west end of the town. About one or two acres of ground are owned by the water company in this situation, bordering on the road, and enclosed by a wire fence on three sides. Upon this plot of ground is located the pumping station and the five wells.

All the wells are connected by a 6-inch pipe, with which each well communicates by a 2½-inch pipe, excepting well No 1, which is connected to the main by a 3½-inch pipe. Each bore rises about two feet in a well from eight to ten feet deep. Well No. 5 is cemented, the remaining ones bricked. Water is aspirated from each well by a pipe passing down the bore to the water level, leaving an interval of about one to two inches between the aspiration pipe and the bore.

There is no way in which the supply from any individual well can be cut off from the pump. The depths of the wells vary from 48 to 463 feet. Well No. 3 and well No. 5 should be designated as sub-soil wells. Well No. 1 as a deep well. None of the series is a flowing well, and could be properly designated as artesian in this sense.

The wells are all covered, and are properly protected from surface drainage. There is a line of earth closets bordering on the east side of the water company's land, which undoubtedly pollute the sub-soil for a considerable distance.

All of these conditions are illustrated on the accompanying diagram.

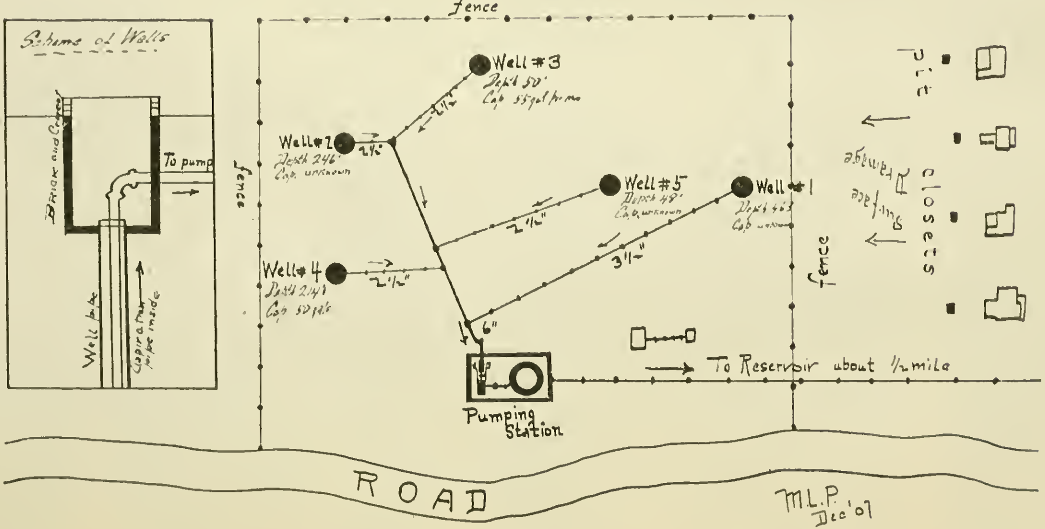
Table A following gives a description of the five wells forming the Collection System.

TABLE A.

	Well No. 1	Well No. 2	Well No. 3	Well No. 4	Well No. 5
Depth in feet	463	246	50	214	48
Diameter of bore....	6 in.	6 in.	6 in.	6 in.	6 in.
Character of soil ...	Clay underlayed	do.	do.	do.	do.
Character of sub-soil.	With gravel.	do.	do.	do.	do.
Character water-bearing stratum:					
Capacity (gals. per min.)	Unknown.	50	55	50	50
Bricked or cemented.	Bricked.	Bricked	Bricked	Bricked	Cemented
For (No. feet)	10 ft.	8 ft.	8 ft.	9 ft.	8 ft.

B. *Storage.* (*Reservoir.*) The reservoir lies east of the town at an elevation of about 150 feet above the pumping station. The bottom was originally clay, but has been covered with gravel. The depth of the water is about two feet. The walls of the reservoir rise somewhat higher. The whole space is enclosed in a wire fence. The capacity of the reservoir is about 425,000 gallons. The amount of water pumped in weekly is about 350,000 gallons, or about 50,000 gallons per day. The loss by leakage and evaporation is about 100,000 gallons per week, or in the neighborhood of 14,300 gallons per day. Leakage and evaporation thus account for about one-third of the total quantity of water collected. The daily

Union Bridge Carroll Co. Water Supply



quantity of water distributed is about 40,000 gallons. The diameter of the inlet is 8 inches; of the outlet, 8 inches.

C. *Distribution.* The height of the reservoir furnishes ample pressure to reach the upper parts of all houses in Union Bridge. There is little probability of the water supply becoming deficient in quantity under the present system.

Analyses.

Seven chemical and nine bacteriological samples were collected by you and Mr. Mitten on September 12th. Seven samples (Nos. 1-7 inc.) and sample No. 10 (chemical) were taken from the town water supply. Five from the wells, numbered 1-5 on the accompanying diagram, two from spigots, No. 6 and No. 10 (the latter chemical only), and one from the reservoir (No. 7). Two samples were taken from private sources, No. 8 (deep bored well) and No. 9 (sub-soil dug well).

The chemical analyses of samples marked No. 4 and No. 5 applies to the mixed waters from wells Nos. 1, 2, 3, 4 and 5, as it was not possible to get separate samples of those waters. Bacteriological samples were obtained by lowering a sterilized bottle down the interval between the bore pipe and the aspiration pipe. The results of the analyses are shown in the table at back of the report.

Of the five samples taken from the town supply, one is classified as "good" by the chemist (Sample No. 7 from the reservoir), but with some qualifications. Two samples are classified as suspicious, both taken from spigots (No. 6 and No. 10). Samples No. 4 and No. 5 are not classified.

The following remarks are made by the chemist:

Samples No. 4 and No. 5.

"It is impossile to explain the difference between these two samples which have identically the same marking, and are presumably the same source."

Sample No. 6.

"The difference between this and the reservoir is suspicious."

Sample No. 7.

"The high chloride and nitrates are not uncommon in these limestone waters."

Sample No. 10.

"There is a remarkable difference in the solids and chlorine between the source pipe and the reservoir."

All of these samples contain a great excess of chlorides and nitrates. The worst sample is from a dug well (private source)—Sample No. 10—in which the chlorine and nitrates are in great excess, and the total solids are also excessive. This sample contains nitrites, which indicate active decomposition of organic matter, and are only found in badly polluted wells. This sample is accordingly classified as "very bad."

The bacteriological analyses include seven samples of the town supply, all of which contain the colon bacillus, and are classified as "bad." It is highly probable that the colon bacillus in this instance indicates pollution with sewage. Sample No. 8 (private artesian well) is the only sample classified as "good" by both the bacteriologist and chemist.

Sample No. 9 (private dug well) contains the colon bacillus, and is classified as "bad" by the bacteriologist and as "very bad" by the chemist.

Conclusions.

In any town of 800 inhabitants, situated on a well marked slope, and disposing of its sewage in earth pits dug in pervious soil, the sub-soil will be generally polluted, especially at the lower part of the declivity, and the lower the level, generally speaking, the greater the depth at which the ground is polluted.

These considerations alone would render, in my opinion, the use of wells of such depth as No. 3 and No. 5 dangerous, irrespective of the analyses. The analyses of Sample No. 9 gives a fair indication of the extent of the pollution of the sub-soil in which the shallow wells are dug. The presence of the colon bacillus, the excessive amounts of chlorine and nitrates, and the presence of nitrites, indicate unmistakably marked sub-soil pollution. An approximately similar degree of pollution would be naturally expected in wells No. 3 and No. 5, but the contamination of wells No. 2 and No. 4, and especially of well No. 1, by the colon bacillus, indicates either deep pollution in the ground, or numerous fissures underground, if the depth of these wells has been correctly estimated.

No conclusions can be drawn from the morbidity returns for Union Bridge, as figures are either incomplete, inaccurate or lacking.

Recommendations.

I recommend:

First—The immediate and permanent discontinuance of wells No. 3 and No. 5 as a source of water supply.

Second—The installation of spigots and valves in the remaining wells, so that each can be disconnected whenever necessary, and so that frequent samples can be obtained for analysis from each well.

Third—An attempt should be made to secure a good, permanent supply by deep borings beneath an impervious stratum.

Fourth—If a permanent, good supply of water can not be obtained in ample quantity, the reservoir should be deepened, the bottom concreted, and the pump kept working for twenty-four hours, or the reservoir should be abandoned, and a stand pipe substituted.

Very truly yours,

MARSHALL LANGTON PRICE,
Secretary.

Baltimore, December 20, 1907.

ANALYSIS OF WATERS SUPPLYING UNION BRIDGE, MD.

SAMPLE MARKED.	Bored Well, No. 1 Union Bridge Water Works.	Bored Well, No. 2 Union Bridge Water Works.	Bored Well, No. 3 Union Bridge Water Works.	Bored Well, No. 4 Union Bridge Water Works.	Bored Well, No. 5 Union Bridge Water Works.	Spigot L. E. Stouffer, Union Bridge Water Works.	Reservoir Union Bridge Water Works.	Artesian Well (private), S. D. Senseney.	Dug Well (iron pipe), A. Fowble.	Spigot S. D. Senseney, Union Bridge Water Works.
CHEMICAL ANALYSIS (Parts per Million).										
Color	...	...	...	0	0	0	0	0	0	0
Odor	...	...	...	0	0	0	0	0	0	0
Reaction	...	...	...	Alkaline	Alkaline	Alkaline	Alkaline	Alkaline	Alkaline	Alkaline
Total residue at 230° F	...	...	...	324	436	402	175	188	742	370
Ignited residue	...	...	...	...	...	...	...	...	...	...
Volatile residue	...	...	...	...	...	...	...	...	...	...
Chlorine	...	...	...	27	28	24	21	10	77	24
Nitrogen as free ammonia	...	...	...	Trace	Trace	Trace	Trace	Trace	Trace	Trace
Albuminoid ammonia	...	...	...	Trace	Trace	Trace	0	Trace	Trace	Trace
Nitrates	...	...	...	10	60	12	7	12	50	7
Nitrites	...	...	...	0	0	0	0	0	Trace	0
Earthy bases calculated	...	...	...	...	...	...	...	...	...	...
Sulphates calculated as SO_3	...	...	...	...	...	...	...	...	...	...
Character of water	...	...	...	...	...	Suspicious	Good	Good	Very bad	Suspicious
BACTERIOLOGICAL ANALYSIS.										
No. Bacteria per c. c. Ærobic	Liquified	Liquified	650	700	Liquified	250	Liquified	350	350	...
No. Bacteria per c. c. Anærobic	Liquified	Liquified	...	...	Liquified	...	Liquified	...	...	...
Colon Bacillus in 1 c. c.	...	...	...	...	...	...	...	...	...	...
Colon Bacillus in 10 c. c.	+	+	+	+	+	+	+	0	+	...
Colon Bacillus (Presumptive Test)	...	...	...	...	...	...	...	...	...	...
Too many bacteria	...	...	...	...	...	...	...	...	...	...
Character of water	Bad	Bad	Bad	Bad	Bad	Bad	Bad	Good	Bad	...

Chemical Samples Nos. 4 and 5 were taken at spigot of Pumping Station and contain mixed waters from wells Nos. 1, 2, 3, 4 and 5.

Approved Dec. 24, 1907:
MARSHALL LANGTON PRICE, *Secretary.*

W. B. D. PENNIMAN, *Chemist.*
WM. R. STOKES, *Bacteriologist.*

SANITARY INSPECTION OF ST. TIMOTHY'S SCHOOL, CATONSVILLE, BALTIMORE COUNTY.

Miss Carter,

St. Timothy's School, Catonsville, Md.

Dear Madam: I am sending you herewith an opinion upon the sanitary condition of St. Timothy's School, which I inspected on October 8, 1907. I have also taken up the consideration of three suspected typhoid fever cases, which were taken sick during October and November of this year.

At the time of my inspection, the school contained a resident population of 90 persons, 62 of whom were pupils from 15 to 20 years of age, and the remaining 28, teachers, officers, and employees. There were also 53 day scholars, ranging from 8 years upwards, making a total of 115 pupils. The quinquennium from 15 to 20 years represents the period of the greatest susceptibility of typhoid fever. This is shown for Maryland by analysis of the Maryland morbidity figures from 1899 to 1904 (Statistical Analysis of Typhoid Fever in Maryland, Report of the State Board of Health for 1904, pages 132 to 145). Of the total number of cases of typhoid fever analyzed during the five years mentioned, 18.5% occurred between the ages of 15 and 20 years. There were during this period an average of 450 cases annually (estimated), in an estimated population at this age of about 60,000. The normal "attack rate" in the rural districts in this State for persons between the ages of 15 and 20 would be, therefore, at the lowest, 0.75% annually, and with this normal attack rate, a population of 62 scholars would furnish about one case every two years, or during the 25 years in which the school has been in existence, about 12 to 13 cases. It appears, however, there has only been two cases during this period, and both of these were taken sick about two days after arrival at the school, and were, therefore, infected before arrival.

The three cases whose history must be considered are given in order as follows:

Case 1. E. H., aged 16. Taken sick October 6, 1907. Symptoms, nausea and lassitude. Went to bed October 9th. Widal and diazo reactions were both present. Became convalescent November 8th. This case had been in Atlantic City previous to reaching the school, which opened on October 2nd. It is evident from the short time elapsing between arrival at school and the onset of the disease (4 days) that this case arrived at school during the incubation period, and was infected elsewhere. Diagnosis—Typhoid fever.

Case 2. D. C., aged 17. Taken sick about October 12th. Symptoms, fever, dizziness and fatigue. Only in bed 24 hours in the school and was then removed to Washington. This was an ambulant case throughout, and I am convinced from the history, was sick on arrival at the school. The apparent onset is only to be regarded as an acute exacerbation of the symptoms, or a remission in the course of the disease, probably due to some indiscretion in diet. Only one Widal reaction was made in this case, which was negative. I believe, however, that the disease could be diagnosed from the clinical symptoms as typhoid, or paratyphoid fever.

Case 3. J. W. H., aged 14 to 15. Taken sick on November 4th following over-exercise. Symptoms in this case were severe headache, cough and moderate temperature. This case, since removal to Washington, has proven not to be typhoid fever, and I am inclined to believe the diagnosis should be influenza, with acute bronchitis.

The first patient had a bedroom on the first floor, the remaining cases on the third floor. The evidence is very strong against either of the two typhoid fever cases being infected in the institution.

General Sanitary Conditions.

The main building faces southwest. The infirmary lies northeast of the main building. The water supply enters the building from the southwest, and is distributed through three pipes from the cellar; one to the west wing, one to the east wing, and one to the infirmary. Each pipe is supplied with a valve. The sewage passes northeast. It is disposed of first, by passing through a settling tank, then to a septic tank, and finally by the Waring system of underground drainage. The surface drainage is also to the northeast. The infirmary drainage passes through a separate system. There is no possible communication between the water and sewage systems. The plumbing and ventilation systems are both excellent.

The water supply is furnished by the Baltimore County Water & Electric Co. The high service is from an artesian well, and the low service from Rock creek. The building is said to receive only the artesian service, but there is probably communication between the two systems. Both the drinking and wash water are regularly boiled. The infirmary is in charge of a matron, and has a separate corps of servants. Meals for patients in the infirmary are prepared in the infirmary kitchen. The washing is also done in the infirmary laundry, and there is no source of communication between the two buildings. Under the present system, the infirmary is qualified to safely deal with all the ordinary forms of contagious and infectious diseases. The discharges of all sick persons have been disinfected with chloride of lime, and Platt's chlorides, and the sick rooms disinfected as soon as vacated. The milk is received already pasteurized. There are separate kitchens, for general cooking and for preparing desserts. The kitchens are large in size, and the arrangements efficient in every respect. All the tableware is scalded with boiling water in addition to being washed. There are four waitresses, who also act as chambermaids.

RECOMMENDATIONS.

I do not believe that the general sanitary conditions of the school can be very much improved upon. I have no hesitation in highly commending them, as it is very unusual for schools to give the proper and thorough consideration to hygienic problems which their importance warrants.

I would recommend screening the windows of the kitchens and dining-room to exclude flies, and also that the waitresses be required to wash their hands and put on clean aprons with sleeves, and fronts reaching to near the bottom of the skirt, before waiting on the table. This regulation has been in force I understand for several years, and should be continued.

I further recommend that the milk, which is already pasteurized when received, be again pasteurized in the institution. A separate tray should be provided for this purpose, so that the bottles, with their contents, can be moved directly from the pasteurizer into an ice chest for cooling.

The disinfection of rooms vacated by patients, I do not consider necessary in the typhoid fever cases, but it would be a very proper precaution if you desire to do it. Washable articles in cases of sickness should be disinfected and laundered in the infirmary.

Very respectfully,

MARSHALL LANGTON PRICE,

Secretary.

SANITARY INSPECTION SCHOOL NO. 2, RIVERDALE, PRINCE GEORGE'S COUNTY.

October 15, 1907.

Dr. John E. Sansbury,
Health Officer, Prince George County, Forestville, Md.

Dear Dr. Sansbury: I am sending you herewith an opinion on School No. 2, at Riverdale, Prince George county, which I inspected with you on October 14, 1907:

This school is a frame, one-story building containing two rooms and a basement. The drainage is fairly good. There is no provision for artificial ventilation. The lighting and window area are, on the whole, fairly satisfactory. The two upper school rooms, I may designate as Room A for the smaller room, and Room B for the larger. Room A measures about 18x20 feet, with a 12-foot ceiling. Room B, about 20x33 feet, also with a 12-foot ceiling. Both rooms are heated with cast iron coal stoves, and each contains two small coat rooms. Room A is now filled to its maximum capacity, which is 42 pupils. About 84 pupils attend the school in this room, but are divided into two sections. At the time our inspection was made it was practically completely filled, only about four pupils being then absent. There were no sessions going on in Room B. The capacity of Room A was 4,320 cubic feet, with a floor space of 360 square feet. This would give a floor area per pupil of 8 4/7 square feet, and would give an air space per pupil of 103 cubic feet. In the best forms of institutions, it is considered advisable to allow 100 square feet of floor space per person, as the height of the ceiling does not offer any material advantages when a height of 12 feet or greater is reached. It is also improper to allow, without a very efficient artificial ventilation, less than 1,000 cubic feet per person. This school room, at the time of our inspection, was not ventilated at all, except from air which could find entrance through the door and through the windows. The school room was also unheated. Room B had a floor space of 660 square feet, and a cubic contents of 7,920 feet. This would give a floor space per pupil of 13¾ square feet, and an air space per pupil of 166 cubic feet. Thus there is about 10 times as many people in Room A as there should have been under proper hygienic conditions, and about five times as many in Room B.

It appears to be a matter of great difficulty to construct a school within a reasonable expenditure of money which will provide a proper air and floor space for each pupil, but I should consider it, if not dangerous, injurious to the health of the children if more than 12 pupils occupied Room A, or 20 occupied Room B. Until accommodations can be considerably enlarged, the best thing that could be done would be increase very much the heating capacity, and installing Tobin's tubes or other form of ventilator in the windows. A pan of water should also be kept upon the stove to provide a proper degree of moisture for the air.

I also examined the basement of the school with you at the same time, which it is proposed to use as an additional school room. This basement is of cement walls, with a tongued and grooved plank floor. The basement has two windows and a door at either end, and four windows upon the southeast side. The windows are partly above the level of the outside ground. Owing to the slope of the ground, the floor lies about three feet below the level of the earth on the southeast side, and about six feet below on the southwest side. A portion of the floor is decidedly damp on one side on account of moisture coming through the floor. This room contained 476 square feet and 3,808 cubic feet. The floor measured 28x17 with an 8-foot ceiling. According to floor space this room would accommodate from 4 to 5 pupils. According to cubic contents, from 3 to 4 pupils. If the proper requirements are cut down one-half, the number of pupils would still be too small to make it profitable to use the room. The effect of the undoubted dampness would certainly tend to intensify the effects of overcrowding. If the present number of pupils continue to attend the school, the accommodations, in my opinion, should be at least doubled.

Yours very truly,

Marshall Langton Price,

Secretary.

EXAMINATION OF WATER, MILK AND OTHER FOODS AT CUMBERLAND, ALLEGANY COUNTY, MARYLAND.

To Whom it May Concern:

In compliance with the provisions of Section 128, of Article 43, of the Code of Public General Laws of Maryland, the results of the analysis of certain samples of milk, vinegar and water, supplying the town of Cumberland, Md., taken at an official inspection made on the 20th day of August, 1907, are hereby publicly announced.

Marshall Langton Price,

Secretary.

ANALYSIS OF WATERS SUPPLYING CUMBERLAND, MD.

SAMPLE MARKED.	Sandy Spring Water—sold from wagon.	Well—Mechanic st. and Pear al.	City Water Supply (kitchen spigot) Dr. Brace.	Bored Well—Centre and Bedford sts.	Well—Decatur and Fulton sts.	Well on Gorthe st.	Well—Market st.	Well—Pear al. across railroad tracks.	Well—Columbia and Knox sts.	Well—Bedford st. ext.	Well—Columbia near Valley st.	City Water Supply (spigot) Tri-State Dairy.
CHEMICAL ANALYSIS. (Parts per Million.)												
Color	0	0	Y	0	0	0	0	0	0	0	0	Y
Odor	0	0	0	0	0	0	0	0	0	0	0	0
Reaction	N	Al.	N	N	Al.	N	N	Al.	Al.	N	Al.	N
Total residue	104	1634	248	390	726	342	190	712	992	82	916	210
Chlorine	1.2	132	13.4	34	28.8	34.4	2.8	44.4	86	2.2	66.4	24
Free ammonia	T	0.95	T	T	T	T	T	T	T	T	T	T
Nitrates	T	62.50	T	6.25	5.0	16.65	0.25	16.67	25.	1.60	27.75	T
Nitrites	0	P	0	T	T	T	0	T	T	0	T	0
Albuminoid ammonia	T	.086	.075	.015	.030	.028	T	T	T	T	T	.071
Character	Good	Bad	Bad	Bad	Bad	Bad	Good	Bad	Bad	Good	Bad	Bad
BACTERIOLOGICAL ANALYSIS.												
No. Bacteria per c. c. Ærobic	200	100	200	1200	200	100	100	250	750	100	# 100000	100
No. Anærobic												
Colon Bacillus in 1 c. c.	*										*	*
Colon Bacillus in 10 c. c.	*	+	+	+	+	+	+	+	+	+	*	*
Character	Suspicious	Bad	Bad	Very Bad	Bad	Fair	Bad	Bad	Bad	Bad	Suspicious	Suspicious

Y—yellow. Al.—Alkaline. P—present. N—neutral. T—trace. #—Too many bacteria.

*—Presumptive test incicates the presence of colon bacillus, although the organism was not isolated in pure culture.

Approved, Sept. 5, 1907:
MARSHALL LANGTON PRICE.

W. B. D. PENNIMAN, *Chemist.*
WM. P. STOKES, *Bacteriologist.*

ANALYSIS OF SAMPLES OF MILK COLLECTED IN CUMBERLAND, MD.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SAMPLE MARKED.	Folck's Dairy—claiming to be Tri-State Dairy.	Oliver O———.	John Wahle—Tri-State Dairy.	Acme Dairy—W. W. Kline.	Early Dawn Dairy—L. Season, prop.	Crystal Dairy—John Smith, prop.	Tri-State Sanitary Milk Co.—pasteurized.	Tri-State Sanitary Milk Co.—not pasteurized.
Fat, per cent........	2.80	5.20	3.40	3.50	4.70	3.60	4.03	3.80
Solids, not fat, per cent...........	6.96	8.69	9.03	8.41	8.34	8.37	8.45	8.16
Total solids, per cent.	9.76	13.89	11.23	12.21	13.04	11.97	16.45	11.96
Preservatives	None	None	None	None	None	None	None	None
Added color	None	None	None	None	None	None	None	None
Conform to legal standard	*	Yes	*	Yes	Yes	Yes	Yes	Yes

* Samples No. 1 and No. 3 are slightly below the legal standard (3.50%), probably because they were drawn from the bottom of the can, without shaking the contents. Otherwise all samples conform to legal standard.

W. B. D. PENNIMAN,

Approved, September 5, 1907:

MARSHALL LANGTON PRICE.

ANALYSIS OF SAMPLES OF VINEGAR COLLECTED IN CUMBERLAND.

	(1)	(2)	(3)	(4)	(5)	(6)
SAMPLE MARKED.	Cider Vinegar—Heinze & Co. F. C. Shoupe.	Cider Vinegar—Snyder Bros.	Cider Vinegar from County. C. J. Saunders & Sons.	Colored Vinegar, Louisville, Ky.—Scott H. Jewell	White Wine Vinegar—J. C. Shoupe.	Cider Vinegar—E. R. Neff.
Adulterant	None	None	None	None	None	None
Total solids, per cent	2.18	2 01	1.22	0.51	0.16	2.30
Acetic acid, per cent	5 10	4.71	3.18	4.59	5.94	4 50
Legal standard	Yes	Yes	Misbranded	Yes	Yes	Yes

All samples, with the exception of sample marked "Cider Vinegar from County" (No. 3), are in accordance with the legal requirements of this State. This sample is not cider vinegar.

W. B. D. PENNIMAN,
Chemist.

Approved, September 5, 1907:

MARSHALL LANGTON PRICE.

WATER.

The total number of samples of water examined was twelve. This number included two samples drawn from the city water supply, eight samples from private or semi-public wells, one sample from a bored well at Centre and Bedford streets (depth not stated), and one sample of spring water sold on the streets of Cumberland. None of these samples were classified as good by both chemical and bacteriological analysis. The best sample was that marked "Sandy Spring Water," which was "good" on chemical analysis, and "suspicious" on bacteriological analysis, the colon bacillus being indicated on presumptive test. The two samples of city water were "bad," on chemical analysis. Bacteriologically, one sample was "bad," and one "suspicious." Both probably contained colon bacillus. All of the well waters contained the colon bacillus. The city waters are bad chemically, mainly on account of the high chlorine content. Both the chemical and bacteriological analysis of the wells indicated a varying degree of pollution, generally high. It is evident that sub-soil wells in a town the size of Cumberland can only rarely escape pollution. The only two wells which failed to show pollution on chemical analysis showed the presence of the colon bacillus, on bacteriological analysis. The city water supply showed pollution, as is naturally to be expected in a city drawing raw water from a river subjected to such constant contamination as is the North Branch of the Potomac river. This water is probably superior, however, to the majority of the wells.

The water supplying Cumberland can be classified as unsafe throughout, and a considerable portion, if not all of the supply, is dangerous.

MILK SUPPLY.

The total number of samples examined was eight, taken at random from the milk wagons at the time of the morning delivery. All of the samples were free from color or preservative. Two samples were low in fat content, but this was probably due to their having been drawn from spigots at the bottom of the can after the cream had risen to the top. The result as regards color or preservatives is probably better than all but few of the larger Maryland towns could show. Probably a part of this favorabe result is due to the fact that the milk is delivered directly to consumers from the twenty odd farms supplying the town, and does not have to be stored for long periods, or transported for long distances.

The milk supply may on the whole be classified as excellent.

VINEGARS.

The total number of samples of vinegar examined was eight. Four samples were bought as cider vinegar. Those were true cider vinegar, produced by the acetous fermentation of apple juice. One sample was misbranded "cider vinegar," which was probably a whiskey or low wine vinegar. (Sample No. 3.) This misbranded sample (No. 3) was also deficient on account of the low content of acetic acid, (3.18%), 3.50% being the legal standard.

MARSHALL LANGTON PRICE,
Secretary.

Office of the State Board of Health,
Baltimore, October 10, 1907.

INSPECTION OF LOUIS PALHOUN'S DAIRY.

August 16, 1907.

DR. MARSHALL L. PRICE,
Secretary State Board of Health,
10 South Street, Baltimore, Md.

Sir: I have the honor to submit herewith a report upon the inspection of the dairy of Louis Palhoun, at Melvale, Baltimore county, made pursuant to your instructions. Thursday, August 15th, 1907. I find that Mr. Palhoun does not maintain a dairy for the sale of milk at retail, but sells his milk at wholesale in cans to some of the wholesale dairymen. I examined both the conditions under which the milk is produced on Mr. Palhoun's farm, and also the alleged nuisance produced by the use of garbage for fertilizing purposes, reported by the Baltimore City Health Department.

I find as regards the use of the garbage that this is received on Mr. Palhoun's farm from materials removed by the Baltimore Sanitary Contracting Company from Woodberry. This garbage is of a miscellaneous character, and consists at times of slops and vegetable wastes, and occasionally ashes. This is used over about a half an acre of ground, close to Melvale avenue, northwest of Mr. Palhoun's place. The last load of garbage was dumped while I was inspecting the place. There is a slight sour odor, which is not perceptible from the road, and not as disagreeable as that produced by ordinary fertilizer. Mr. Palhoun notified me that he would cease to allow dumping of any further garbage any time that I should notify him to do so.

I also inspected the dairy, which I found in good condition. There is no accumulation of manure in the stable. Cows are healthy, and in good condition. The cans are clean and well aired. The cows and person of the dairyman in about the average condition of cleanliness, and so far as I was able to ascertain, Mr. Palhoun has carefully followed all the instructions which I gave him on my previous inspection. The previous water supply, which was obtained from a box sunk in a shallow ravine, which received the drainage of two neighboring places, has been discontinued. I examined the site of the previous water-box, and found it was not now in use. The present water supply is obtained from an artesian well about 95 feet deep, by means of a pump. This water is the only water used in washing the cans and for other purposes. The stable is in good condition, and has been whitewashed, but not recently. The only change which I could recommend in the stable is a fresh coat of whitewash, though the cows are now kept mostly in the open air, and will be during the remainder of the summer.

Respectfully submitted,

CHARLES N. MITTEN,
Inspector.

Approved:
MARSHALL LANGTON PRICE, *Secretary.*
August 27th, 1907.

DEATHS NOT REGISTERED AND ILLEGAL INTERMENTS IN CAROLINE COUNTY

BALTIMORE, MD., July 22, 1907.

DR. MARSHALL L. PRICE,
State Board of Health of Maryland.

Dear Sir: I have the honor to submit herewith a report upon the conditions found in Caroline county appertaining to 13 deaths apparently not registered, and in each of which the interment was believed to be illegal. One of these deaths was found to have occurred in Delaware, and interment was made in Queen Anne's county. Of the 12 unrecorded deaths remaining, the greatest number occurred in the vicinity of Greensboro. This apparent discrepancy in the Greensboro death reports can be accounted for, in large part, by the fact that in Greensboro there was no one acting as sub-registrar at the time.

These delinquent death reports cover a period of six months, the earliest date being July 20, 1906, and the latest December 17, 1906. There were no suspicious circumstances connected with any of the cases. Upon investigation it was found that in four of the 12 questionable cases death certificates had been issued but missent, and burial permits had been given. Of the eight cases remaining, three of the deaths were due to old age, two to typhoid fever, one to tuberculosis, one to heart disease and one to nephritis and pleurisy.

Failure to comply with the law in the above instances seems to have been due to ignorance or carelessness on the part of those involved, and not to viciousness or intent to deceive. This statement applies alike to attending physicians, sub-registrars and undertakers.

I also obtained six delayed death certificates for the early part of the year 1907.

In conclusion, I wish to express my sincere thanks to Dr. Enoch George, the efficient Health Officer of Caroline county, for valuable assistance so willingly given.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

Report on Ingleside Farm Dairy.

Baltimore, July 29, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health.

Dear Sir: I have the honor to submit herewith a report upon the conditions found at the Ingleside Farm Dairy, which dairy was inspected by me pursuant to your instructions. The "why and wherefore" for the inspection of the above-mentioned dairy can be briefly summarized, as follows: A few days ago Dr. James Bosley, Health Commissioner of Baltimore city, received a telephone communication from Dr. N. H. D. Cox, West Arlington, informing him that he had just attended a child who had died of what seemed to be a case of poisoning by milk (tyrotoxicon poisoning), said milk having been purchased from Mr. J. Henry Seeger, proprietor of the Ingleside Dairy. The deceased was a 14-months-old child, in the family of Mr. Moody. The child had been ailing for a month or more, and hence the seeking of a suburban home by its parents.

The Ingleside Farm Dairy is located at Park Heights avenue and Wylie avenue, just beyond the limits of Baltimore City. Its proprietor, Mr. J. Henry Seeger, is an enterprising young man of German extraction. Mr. Seeger has been in the dairy business for 14 years, and has been uniformly successful. This fact has caused more or less jealousy on the part of his competitors. Ingleside Farm Dairy is merely a dispensing station, the real source of the milk being the large, well-kept farms of Messrs. Charles Bosley and S. M. Worthington, located at Glyndon.

Mr. Seeger, that is, the Ingleside Farm Dairy, receives 40 or 50 gallons of milk daily. The milk is shipped from the farms to the dairy by Gaither's Express. Immediately upon the arrival of the milk it is strained together into a large can or churn, in order to make it of a uniform quality. The milk is then placed in the delivery wagon and distributed among Mr. Seeger's numerous customers. The milk remains in the dairy scarcely half an hour.

The Ingleside Farm Dairy itself, with the exception of the need of a little cleaning up and whitewashing, is in good condition. These things have not been done recently, Mr. Seeger informed me, because his lease expires November 1st next, at which date he will vacate the premises. The milk cans and other utensils and vessels used about the dairy and in the delivery of the milk are kept scrupulously clean and sweet.

Mr. Seeger has never added a preservative of any kind to his milk. The milk is all dispensed while it is fresh. Mr. Seeger's trade is so large he is scarcely able to supply the demands.

In the dairy building there is an open well with a wooden pump. Mr. Seeger has never used this well for any purpose, but gets his water supply from an artesian well.

Mr. Seeger is still supplying his Baltimore city and county customers. Some of his trade, however, left him when the rumor which evoked this report became current. Its erroneousness will scarcely be questioned when I add that on the same day the Moody child was reported poisoned by Mr. Seeger's milk, Mr. Seeger had served the same milk in the Kelso Home, which contains 45 or 50 children, and on his usual route, comprising about 175 families, and also had used the same milk in his own family of six children. In no instance were there any untoward effects produced.

Respectfully submitted,

C. W. G. ROHRER,
Medical Assistant.

ILLEGAL INTERMENTS IN CAROLINE COUNTY.

BALTIMORE, August 1, 1907.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

Dear Sir: For some time you have been aware that illegal interments are still occasionally made in Maryland. This is in direct violation of Section 18, Article 43, Code of Public General Laws of Maryland, which states explicitly that the body of a deceased person shall not be disposed of in any manner "without previously having obtained a burial permit from the registrar or sub-registrar of the district where the said deceased person died."

Two weeks previously, in accordance with your instructions, I investigated the subject of illegal interments in Caroline county and found specific charges against three of the undertakers, namely, Charles Pritchett, Greensboro; Howard R. Pritchett, Hillsboro, and Daniel Adams, Adamsville, Del. Records show that Charles Pritchett made three illegal interments. One of these, however, expired by limitation, the time limit being one year. There is but one charge against each of the other undertakers named above.

On this day, August 1, 1907, I proceeded to Denton, Caroline county, and took out the following warrants before Mr. Z. Potter Steele, J. P.; Charles Pritchett, for illegally interring the body of Frank B. Clark; Charles Pritchett, for illegally interring the body of Mrs. Rebecca Hubbard; Howard R. Pritchett, for illegally interring the body of Thomas Blackburn; and Daniel Adams, for illegally interring the body of Tilghman Nuttle.

Respectfully submitted,

C. W. G. ROHRER,
Medical Assistant.

REPORT ON THE HIGHLANDTOWN AND CANTON WATER SUPPLY.

August 13, 1907.

Dr. Marshall Langton Price,.

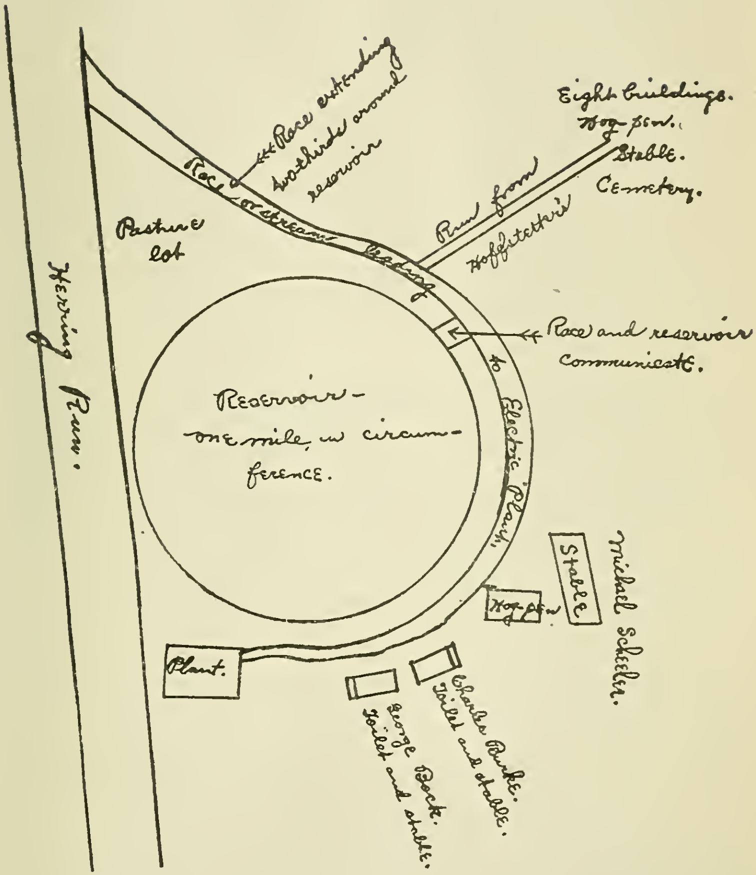
Secretary State Board of Health of Maryland, Baltimore.

Dear Sir: I have the honor to submit herewith a report on the Highlandtown and Canton water supply. Information had been pouring in from various quarters declaring the water supply of Highlandtown and Canton to be badly contaminated, and a menace to the health of some 20,000 people, who use it for drinking purposes. Herring Run is the source of the Highlandtown and Canton water supply. Pollutions were reported along the banks of this stream, and also in the vicinity of the reservoir itself.

On the afternoon of Friday, August 2, 1907, accompanied by Mr. Harry L. Stallings, inspector for Highlandtown, and Dr. C. N. Athey, sanitary officer for the twelfth district, Baltimore county, I inspected the Highlandtown reservoir and adjacent territory. The reservoir is located on the Philadelphia road, three and one-half miles north of Highlandtown. It had been pumped almost dry, because Mr. Stallings reported the presence of an abundance of nitrites in the water.

The first evidence of contamination is a drain from Edward J. Bowers' cow stable. Mr. Bowers keeps 23 to 63 cows. Close by the cow stable is a lot which contains one and a half acres. In this lot is a large manure pile. The drainage from Mr. Bowers' cow stable and lot empties into the Philadelphia road, and thence into Herring Run, the natural watershed being in this direction.

The most serious contaminations are those emanating from the property of Michael Scheeler and his two tenants, all living on the bank of the reservoir. One of the tenants, Mr. George Bock, has a family of five children. In the family of the other tenant, Mr. Charles Burke, there are but two children. Each of these tenants has a stable and water closet on the bank of the stream or race, less than twenty-five feet from the reservoir. This stream or race extends two-thirds of the distance around the reservoir. It supplies the water used in operating the pumping station. Between the stream or race and the reservoir is a bank, but a few feet in thickness. The stream or race does not communicate directly with the reservoir, excepting at its upper part. The reservoir is one mile in circumference. During a freshet the contents of the race overflow


Race extending two-thirds around reservoir
Race or stream leading
Eight buildings.
Hog-pen.
Stable.
Cemetery.
Run from Hoffstetter's
Pasture lot
Herring Run.
Race and reservoir communicate.
to Electric Plant.
Reservoir — one mile in circumference.
Stable
Hog-pen
Michael Scheeler.
Plant.
Charles Burke. Toilet and stable.
George Bock. Toilet and stable.

Highlandtown and Canton Water-supply.
1907.

and enter the reservoir. This also takes place at all times, to a greater or less extent, by percolation.

At the residence of Michael Scheeler there are a hog-pen and two stables. The hog-pen contains 30 hogs, and is located but 35 feet from the stream or race. A stable, containing six horses and one cow, stands about 60 feet from the race. One hundred and fifty feet from the race is another stable.

At the upper end of the reservoir is the residence of Mr. Hoffstetter. From Mr. Hoffstetter's place a ditch comes down and empties into the race about 50 feet above the point of entrance of the latter into the reservoir. This ditch collects the refuse from eight dwelling houses, a stable, and a hog-pen, and also carries off the surface drainage from a cemetery. Near this locality there are three other sources of contamination; namely, the property of Mr. Lesley, of H. Shenning, and of Joshua Horner, the first two being about one-quarter of a mile from the Philadelphia road.

The inspection of Herring Run, from Harford road to the Highlandtown reservoir, a distance of four and one-half miles or more, was made by me on the following afternoon, Saturday, August 3, 1907. Two principal sources of pollution were found: On the upper side of the Harford road bridge there are three dwellings, one of them having a dairy connected with it. The stable contents and human offal from these places enter into Herring Run. These buildings are located within the limits of Baltimore city. From Harford road to Belair road there is no pollution. Below Belair road and about 300 yards from Brehm's lane I observed that the air is filled with foul odors. These arise from a small stream which, for the want of a better name, I have designated "Brehm's Run." Brehm's Run arises in Lake Clifton, flows through Swartz's place, passes under Belair road by means of pipes, then crosses Brehm's property, connecting the water closets of Belair road and Brehm's Lane. The Run then crosses Brehm's Lane and receives drainage pipes from different sections, carrying the waste matter from numerous water closets and from Brehm's brewery. Brehm's Run then passes down between Erdmann's and Nicholas Register's and empties into Herring Run about two miles above the Highlandtown and Canton reservoir. Brehm's brewery and about 30 houses empty their sewage, including human excrement, into this—"Brehm's"—Run. This Run also collects the surface water from a cemetery.

On the south side of Brehm's Lane is a stable belonging to Mr. Breeback, a retired dairyman. Just outside of the stable is a manure pile. This stable and manure pile are on Herring Run, but they cannot be considered nuisances.

Nothing further worthy of note was seen until I approached Highlandtown. About 500 yards from the upper part of the reservoir there is a small house with water closet not more than 20 or 30 feet from the water's edge.

Additional data can be furnished by Mr. Harry L. Stallings and Dr. C. N. Athey, of Highlandtown, and by Dr. Wm. D. Corse, of Gardenville.

Five photographs were taken:

1. Large pipe which empties waste from Ed. J. Bowers' cow-stable into Philadelphia road.
2. Residence of George Bock. Water closet and stable 20 or 25 feet from reservoir.
3. Residence of Charles Burke. Water closet and stable 20 or 25 feet from reservoir.
4. Michael Scheeler's hog-pen and stable. Hog-pen 35 feet from reservoir. Stable 60 feet from reservoir.
5. Small run on Hoffstetter's place, which empties into race 50 feet above entrace of latter into reservoir. On this run are located eight dwellings, a stable, hog-pen and cemetery.

Respectfully submitted,

C. W. G. Rohrer,

Medical Assistant.

REPORT ON THE ROBERT H. MERRICK DAIRY.

August 19, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health,
10 South Street, Baltimore.

Dear Sir: On the morning of the 17th inst. a communication was received from Dr. C. Hampson Jones, Assistant Health Commissioner of Baltimore City, relative to the present outbreak of typhoid fever in Woodberry and Hampden. There are thirteen cases in all, exclusive of a case reported on June 30th. With two exceptions, all of the families in which these cases have developed drink city water. As to the milk supply, eleven of the thirteen families use milk, and six of them receive it from one dairy. This dairy, located at 504 Hickory avenue, is managed by Mr. John Yake, whose adopted son is ill at the present time with typhoid fever. Prior to his attack of typhoid fever, this young man assisted Mr. Yake in his dairy work.

The milk dispensed by Mr. Yake is obtained from Mr. Robert H. Merrick, Reisterstown road, south side, two squares from Belvedere avenue. Dr. Jones is apprehensive of another milk epidemic of typhoid fever similar to that of the spring of 1906, and accordingly recommended that Mr. Merrick's place be inspected.

Pursuant to your instructions, Saturday morning, 17th inst., I proceeded at once to Mr. Merrick's. Mr. Merrick has been in the dairy business twenty years, only a few months, however, at his present location. Mr. Merrick keeps thirty-eight cows, and disposes of eight five-gallon cans of milk twice a day. Mr. Yake receives the morning milk, and Mr. Fox that drawn in the evening. In the morning Mr. Merrick himself dispenses one five-gallon can, chiefly to customers on Park Heights avenue.

Mr. Merrick has a wife and nine children, all in good health. Mr. Merrick is assisted in the work by Mrs. Merrick and their oldest son, a young man of seventeen.

Mr. Merrick's stables, dairy, and dairy utensils are well kept. The present dairy building was formerly a smoke-house. A well, the only source of Mr. Merrick's water supply, is within ten feet of this building. A trough from which horses drink extends partly over the well and beyond it. The well is about twenty-five feet deep, and protected from surface drainage. Thirty yards from the well is a water closet. About an equal distance in an opposite direction is the stable. The surface drainage is in another direction from the well.

Samples of water from Mr. Merrick's well, and samples of milk, will be collected for chemical and bacteriological analysis.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

TYPHOID FEVER IN THE VICINITY OF CHESTERTOWN.

Baltimore, October 1, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health of Maryland.

Sir: I have the honor to report that, accordant with your instructions, during the forenoon of the 27th ult., I investigated a local outbreak of typhoid fever occurring in Kent county, three miles from Chestertown.

Before leaving Baltimore for Chestertown, in compliance with your request, I visited the office of the Maryland Geological Survey to obtain, if possible, data concerning the artesian wells in Kent county.

Geological Note.

According to the bulletin of the United States Geological Survey, 1896, No. 138, page 122, *et seq.*, the Kent county water is from a coarse gravel which appears to be in the Chesapeake formation—the great Chesapeake diatom bed. The geological horizon is designated "cretaceous." Section shows the strata to be composed of diatomaceous clay, gravel, shell and sand. This arrangement of the layers of the earth's crust constitutes in itself an almost perfect natural filter.

Through kindness of the Maryland Geological Survey I had access to their filed reports and found records of eight artesian wells in Kent county. These wells range from 100 feet to 583 feet in depth. An artesian well in Chestertown, sunk during August and September, 1901, by the Chestertown Water Works Company, measures 583 feet in depth. Up to 115 feet the section is yellow sand, gravel, with iron ore. Up to 583 feet, and below, the strata are mainly blue clay.

Clinical Memorandum.

In the household of Mr. R. G. Nicholson, a prosperous farmer and nurseryman of near Chestertown, Kent county, there developed three *bona fide* cases of typhoid fever and one suspicious case during the month of September. The latter suspicious case occurred in the person of a hireling, James Bigelow by name. Mr. Bigelow was taken sick August 18th. His illness, which lasted three weeks, was diagnosed malaria by his attending physician.

Two of the undoubted cases of typhoid fever have occurred in Mr. Nicholson's immediate family. The first case was that of a son, W. Lusby Nicholson. Lusby Nicholson had been boarding at Washington College for one year. His roommate, Mr. Gill, was sick in July for about two weeks. Mr. Gill was nursed by Mr. Nicholson. Mr. Gill, accompanied by Mr. Nicholson, went to Rehoboth July 3d. From Rehoboth these boon companions journeyed to Pocomoke City, August 16th, and thence to Snow Hill.

Mr. Gill stated that he had had the disease which causes "ulcers to be formed in the intestines." All told, Mr. Gill had fever for some five or six weeks. As the late Professor Latimer used to tell his classes: "In this latitude, a continued fever of 10 days' duration is invariably typhoid."

The late Lusby Nicholson's illness dated from August 22d. He was taken sick at Snow Hill, and brought home three days later, August 25th. Three weeks after the inception of the disease Mr. Nicholson died from the effects of a profuse intestinal hemorrhage.

A daughter of Mr. Nicholson was taken ill eight days after the arrival of her sick brother. Direct contact with her brother by kissing and other marks of affection was perhaps the means of contagion.

The third case of typhoid fever was that of Mr. Nicholson's housekeeper, Mrs. Edith Jones, of Baltimore. Mrs. Jones, who was taken sick early in September, returned to Baltimore and entered St. Luke's Hospital for treatment.

Water Supply.

Five samples of water and one sample of milk, making six samples in all, were taken for bacteriological examination. The sample of milk and four of the samples of water were collected on Mr. Nicholson's farm. The fifth sample of water was taken from a tile spring on an adjoining farm, that of Mr. Wilbur Eliason.

The report of the bacteriological analyses is as follows: "All five samples of water are classified as 'bad;' the sample of milk 'suspicious,' on account of the high bacterial count (4,000,000)."

Conclusion.

The fact that a bacteriological examination of the water and milk collected on Mr. Nicholson's place shows contamination of both the water and milk supplies does not completely set aside a former opinion, namely, that the disease probably originated by contagion or direct contact, a method of transmission of typhoid fever which received increasing attention at a recent meeting of the American Public Health Association.

Thanks are due Dr. H. G. Simpers, the efficient Health Officer of Kent county, for many courtesies. Dr. Simpers' methods were thorough and could not have been improved upon.

Respectfully submitted,

C. W. G. Rohrer,

Medical Assistant.

CANNING FACTORIES IN AND NEAR CAMBRIDGE.

Baltimore, October 1, 1907.

Dr. Marshall L. Price,
Secretary State Board of Health.

Sir: I have the honor to report that pursuant to your instructions, on the morning of September 28, I made a preliminary inspection of two canning factories located in the suburbs of Cambridge, Dorchester county. The town Health Officer, Dr. Jacob C. Travers, had been instructed by the City Council to request you or your assistant to come down to Cambridge at once, in order to help devise a plan to do away with the terrible odor emanating from the canning factories in or near that place.

Cambridge, situated on the south bank of the Choptank River, is a thriving city of about 6,000 inhabitants. It is the sixth city in Maryland in point of size. A small stream, an arm of the Choptank River, known as Moore's Branch, divides the city into two parts—East Cambridge and West Cambridge.

The canning industry is a source of very great revenue to the people of Cambridge and vicinity, and should be encouraged. In the quality and quantity of its canned goods the Eastern Shore of Maryland holds high rank. The two canning factories in question, owned respectively by the Hearn Packing Company and the Phillips Packing Company, are located one-half mile from the city of Cambridge.

The canning factories themselves, together with their warehouses, are well kept and in an excellent sanitary condition. The sole problem is one of defective drainage, that is, a proper disposal of the offal and sewage. At the present time the sewage pipes from the canning factories empty directly into Moore's Branch, polluting this stream to an alarming extent. Large quantities of decaying vegetable matter are strewn along the banks of the stream and also float upon the surface of the waters of the same, eventually reaching the very heart of the city. An intolerable stench is thus generated. The foul odor, worse at night and in hot weather, can be detected throughout the entire city.

The contaminated water of Moore's Branch is fatal to fish and crab life, thus increasing the difficulty. Numerous dead fishes and crabs, whose putrefying bodies line the shore, greet the eye. A turkey buzzard was seen feasting on the carcass of a dead fish, within a stone's throw of one of the principal residences in the city.

These noxious vapors cannot of themselves breed disease. But they are prone to produce in persons inhaling them a condition of lowered vitality described by Cohnheim as "reduced physiological resistance." This bodily depravity renders one more susceptible to attacks of disease and less able to withstand its ravages. By way of example I wish to cite one instance, namely, the epidemic of plague in Maryland in late summer and autumn of 1804. Historians are as one man in ascribing the primal cause of this outbreak to bad hygienic surroundings.

"Every species of fruit was alike favored by the fertilizing weather, and so enriched was the soil by the rain and sun alternately that it produced too much. This great mass of vegetable matter sprang up, grew luxuriantly, wasted and decayed. Forming a body for the powerful sun to act upon, this mass of matter fermented, and impregnated the air with the principle of disease and death."—*Dulany's History of Maryland.*

Leading from each of the aforesaid canning factories—the Hearn Packing Company and the Phillips Packing Company—situate in the suburbs of Cambridge, there is one main sewer formed by several smaller ones. Twenty yards distant from the Hearn Packing Company's factory these two main sewers become confluent, and thence into Moore's Branch.

There are three canneries in successful operation within the city limits. With these canneries no real or apparent difficulty has been experienced, as the refuse is scowed to the river.

I am indebted to Dr. Travers, to Mayor Johnson and to Mr. Phillips, one of the town commissioners, for many courtesies.

Conclusion.

Filtering the liquid portion and hauling away the pulp, peelings and other waste matter would probably be the most effectual means of correcting this unhealthful state of affairs.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

INSPECTION OF ANDREW W. ESSIG'S PLACE.

October 8, 1907.

Dr. Marshall Langton Price,
Secretary State Board of Health,
10 South Street, Baltimore.

Sir: I have the honor to report that, in accordance with your instructions, I inspected the premises of Andrew W. Essig, on the afternoon of October 7th, 1907. Mr. Essig lives opposite Montebello Gate, on Hillen road.

On September 23d, a daughter of Mr. Essig was reported to have died of pulmonary tuberculosis. The premises of Mr. Essig were also reported by the district Health Officer, Dr. Massenburg, to be in an unsanitary condition.

Mr. Essig's family consists of his wife, one son, and three daughters. The son's eyesight has been failing for seven years, and the oldest daughter is mentally deranged. Otherwise, the general health of each member of the family is good.

The room occupied by Mr. Essig's deceased daughter has been fumigated by Dr. Massenburg. The walls of this room and of every room in the house have been whitewashed. The stables, hen houses, and other out-buildings have been subjected to a thorough cleaning.

Mr. Essig's buildings are old, and not all prepossessing in appearance, but disinfection and cleansing which these have received would warrant the removal of the ban and the reinstatement of Mr. Essig in the market-place.

Respectfully submitted,

C. W. G. Rohrer,
Medical Assistant.

DENMORE PARK NUISANCE.

Baltimore, October 15, 1907.

Dr. Marshall Langton Price,
Secretary State Board of Health of Maryland,
Nos. 8 and 10 South Street, Baltimore.

Sir: I have the honor to submit the following data relative to an alleged nuisance at Denmore Park, Baltimore county, which I investigated, pursuant to your instructions, on the 12th inst.

The following appeal from Mr. Charles F. Hanna, and addressed to the Board of County Commissioners for Baltimore county, had been forwarded to you:

"I beg leave to call your attention to two large iron pipes that vomit filth into the gutter of Denmore Park. The outlet of one of them is at the corner of Spaulding and Park Heights avenues, in said Park.

"Said pipe leads from above Belvedere avenue, crossing from the east to the west side of Park Heights avenue, at least 1,500 feet from this outlet. The horrible stench of the fetid matter which pours therefrom is so great that it can be plainly smelt upon the porches of the houses in Denmore Park, situated 75 feet back from the said gutter.

"This fetid matter festers in the entire length of said open gutter in front of Denmore Park for about 1,000 feet. This condition must be not only detrimental to health, but it is injuring the property, as this gutter has attained such a notoriety that persons who desire to build are deterred from buying in this neighborhood, and passers-by notice the disagreeable effluvium, and remark about it.

"These drains are in no way connected with Denmore Park, but with houses far north of Belvedere avenue on the opposite side from Denmore Park, on Park Heights avenue.

"Your immediate attention to this matter will greatly oblige the residents of Denmore Park."

Denmore Park is beautifully located, and contains one acre.

The following pieces of property apparently empty their drainage into the sewer pipe at Park Heights avenue, near Belvedere avenue:

Gray's Hotel, west side of Park Heights avenue.

Pimlico Country Club, east side of Park Heights avenue.

Kennedy's Flats, numbering about a dozen houses, also on the east side of Park Heights avenue.

The sewer pipe in question follows the course of Park Heights avenue, passes Spaulding avenue, and terminates at Singer avenue—Park Heights and Singer avenues. Here a 14-inch pipe empties on the surface. From this juncture, Park Heights avenue and Singer avenue, there is an open sewer for a distance measuring about 173 yards, until Spaulding's drain is reached.

The 173 yards of open sewer is the cause of the present dissatisfaction among the residents of Denmore Park. If sewer pipe were laid from Park Heights avenue and Singer avenue to Spaulding's drainage pipe, it would obviate the difficulty.

Respectfully submitted,

C. W. G. Rohrer.

Medical Assistant.

ILLEGAL TRANSPORTATION OF DEAD BODIES IN ALLEGANY COUNTY.

Baltimore, November 21. 1907.

Dr. Marshall Langton Price,

Secretary State Board of Health of Maryland,

Nos. 8 and 10 South Street, Baltimore.

Sir: I have the honor to submit herewith a preliminary report on an attempt made to suppress illegal transportation of the bodies of deceased persons in the northwestern part of the State. This was done, pursuant to your instructions, on Monday, the 18th instant.

On the 11th inst. a communication was received from George H. Martz, coroner for Allegany county, imparting the following information:

> There were two men killed on the Baltimore and Ohio Railroad, on June 7th, 1907, caused by negligence on the part of the railroad company. The said railroad company hurried the bodies off into West Virginia, without notifying the coroner. There was also a man killed on the same railroad in Garrett county, and shipped to this city (Cumberland), on the same date above set forth.

The two men killed on June 7, 1907, were Italians, named, respectively, Ruggio Antonio (Antonneo) and Francisco Guevachinao. The place of death was Rawlings Station, twelve miles west of Cumberland. The bodies of the two dead men were hurriedly taken to Keyser, West Virginia. Transportation permits had not been issued nor asked for, in either case.

As has been stated in your reply to Coroner Martz, such action on the part of the railroad company you regard as a flagrant and wilful violation of the provisions of Sec. 11 and Sec. 18 of Art. 43, of the Code of Public General Laws of Maryland.

The names of the train officials having charge of the transportation of the bodies of the deceased Italians were kindly furnished by Coroner Martz. They are: N. J. Harrington, supervisor; W. L. Valentine, section boss, and R. W. Carroll, conductor of train No. 71.

On Monday, November 18, 1907, before Justice of the Peace Charles H. Wolford, of Cumberland, I took out two warrants against each of the three railroad officials mentioned above. The transportation of the dead bodies of the two men was considered as two separate and distinct offenses.

William Perry, the engineer (engine No. 2069), has been named as a witness; likewise Frank Clement and Andra Pisainda.

At the same time and place I took out a warrant for Mr. C. M. Gearhart, Baltimore and Ohio Railroad agent at Cumberland, for directing the transportation of the dead body of Ernest Mitchell from Garrett county to Cumberland without the usual permit required by law.

Respectfully submitted,

C. W. G. ROHRER,

Medical Assistant.

REPORT OF THE BACTERIOLOGIST.

BALTIMORE, April 22, 1908.

DR. MARSHALL L. PRICE,
Secretary State Board of Health.

Dear Sir: I hereby respectfully report the work done in the Bacteriological Laboratory during the year of 1907.

TABLE NO. 1.

EXAMINATIONS FOR PHYSICIANS FOR THE DETECTION OF DISEASE.

(January 1, 1907, to December 31, 1907, inclusive.)

Examination of blood for the typhoid reaction: Positive reactions, 387; negative reactions, 630; suspicious, 92; unsatisfactory, 14—total, 1,123.

Examination of blood for suspected malaria: Negative, 249; positive, 7; unsatisfactory, 37—total, 293.

Examination of sputum for tuberculosis: Tubercle bacilli present, 265; tubercle bacilli not present, 504; suspicious, 1; unsatisfactory, 11—total, 781.

Examination of suspected diphtheria: Positive cases, 115; negative cases, 282; suspicious, 3; unsatisfactory, 1—total, 401.

Water examinations, 484.

Milk examinations, 30.

Food examinations, 136.

Miscellaneous examinations, 3.

Total number of examinations, 3,251.

TABLE No. 2—TABULAR REPORT OF WATER EXAMINATIONS.

* Too many bacteria. † Atypical colon. ‡ Presumptive test. § Bacillus cloacæ. ¶ Intestinal bacteria.

Tap, Stream, Well or Spring.	Date.		Colonies per c. c.	Colon Bacillus.	Quality.
Water from Mt. Washington, Dr. Jas. Bordley, Professional Building	Jan.	3	1,800	Present in 10 c. c.	Suspicious†
Spigot in house, B. F. Spencer, Mt. Washington, No. 3. North ave.	Jan.	3	1,500	Not found in 10 c. c.	Fair
Spigot in kitchen, Mrs. H. C. Cornstable, Mt. Washington, No. 2, South ave.	Jan.	3	3,000	Not found in 10 c. c.	Suspicious*
Spigot, Mrs. Chas. E. Grimes, Mt. Washington, Spigot No. 1, North ave.	Jan.	3	1,200	Not found in 10 c. c.	Fair
Well, Jacob Doken, Belair, Dr. I. R. Page	Jan.	3	1,500	Present in 10 c. c.	Bad
Well, Frank Duvall, Dr. L. A. Griffith, Croom, Md.	Jan.	16	Not made	Not found in 10 c. c.	Good
Box well No. 1, Mt. Washington W. W. Co., artesian well	Jan.	21	15	Not found in 10 c. c.	Good
Spigot, Gernand's kitchen, Mt. Washington, No. 2, Box No. 1	Jan.	21	30	Not found in 10 c.	Good
Subsoil well, C. D. Baughman, Mt. Washington, No. 3, Box No. 1	Jan.	21	1,200	Present in 10 c. c.	Bad
Subsoil well, Gambrill, Mt. Washington, No. 4, Box No. 1	Jan.	21	2,700	Present in 10 c. c.	Bad
Subsoil well, Gephardt, Mt. Washington, No. 5, Box No. 1	Jan.	21	60	Not found in 10 c. c.	Good
Subsoil well, Sterling, Mt. Washington, No. 6, Box No. 1	Jan.	21	1,320	Not found in 10 c. c.	Fair
Well No. 2, artesian, Mt. Washington, No. 7, Box No. 1	Jan.	21	45	Not found in 10 c. c.	Good
Well No. 4, artesian, Mt. Washington, No. 8, Box No. 1	Jan.	21	60	Present in 10 c. c.	Bad
Spigot, Dr. Bordley's kitchen, Mt. Washington, No. 9, Box No. 1	Jan.	21	20	Not found in 10 c. c.	Good
Spigot, Wahzl kitchen, Mt. Washington, No. 1, Box No. 2	Jan.	21	480	Not found in 10 c. c.	Good
Subsoil well on top Mt. Washington Hill, Owens, No. 2, Box No. 2	Jan.	21	720	Not found in 10 c. c.	Good
Spigot, Sullivan kitchen, Mt. Washington, No. 3, Box No. 2	Jan.	21	60	Not found in 10 c. c.	Good
Spigot, Cornstable kitchen, Mt. Washington, No. 4, Box No. 2	Jan.	21	540	Not found in 10 c. c.	Good
Spigot, Plummer kitchen, Mt. Washington, No. 5, Box No. 2	Jan.	21	720	Not found in 10 c. c.	Good
Subsoil well, Brown-Graham, Mt. Washington, No. 6, Box No. 2	Jan.	21	180	Not found in 10 c. c.	Good
Subsoil well, rear of Dr. Todd, Mt. Washington, No. 7, Box No. 2	Jan.	21	900	Not found in 10 c. c.	Fair
Subsoil well, Dr. Todd, Mt. Washington, No. 8, Box No. 2	Jan.	21	900	Not found in 10 c. c.	Fair
Spigot, Dr. Bowen's kitchen, Mt. Washington, No. 9, Box No. 2	Jan.	21	60	Not found in 10 c. c.	Good
Subsoil well, Dr. Bowen, Mt. Washington, No. 10, Box No. 2	Jan.	21	480	Present in 10 c. c.	Bad
Spigot, Lewis Blumberg's store, Port Deposit, R. Bond, Bailiff, No. 1	Jan.	25	480	Present in 10 c. c.	Bad
Spigot, Carson's pharmacy, Port Deposit, R. Bond, Bailiff, No. 2	Jan.	25	600	Not found in 10 c. c.	Good
Wilson's hardware store, Port Deposit, R. Bond, Bailiff, No. 4	Jan.	25	480	Not found in 10 c. c.	Good
Stream No. 1, Wm. W. Finney, Belair, No. 1	Feb.	2	90	Present in 10 c. c.	Bad
Stream No. 2, Wm. W. Finney, Belair, No. 2	Feb.	2	1,200	Not found in 10 c. c.	Fair
Artesian well, Wm. W. Finney, Belair, No. 4	Feb.	2	900	Present in 10 c. c.	Bad
Spigot, tank, Wm. W. Finney, Belair, No. 5	Feb.	2	900	Not found in 10 c. c.	Fair
Spigot in Inn kitchen, Tome Institute, Port Deposit, Dr. Rich, No. 1	Feb.	5	600	Not found in 10 c. c.	Good
Spigot, Washington Hall, town supply, Tome Inst., Pt. Dep., Dr. Rich, No. 2	Feb.	5	120	Not found in 10 c. c.	Good
Spigot, Junior Building, town supply, Tome Inst., Pt. Dep., Dr. Rich, No. 3	Feb.	5	480	Present in 10 c. c.	Bad
Pump, C. W. Heborn, Warren, A. M. Quick, Water Engineer, No. 25	Feb.	11	600	Not found in 10 c. c.	Good
Spring, C. W. Heborn, Warren, A. M. Quick, Water Engineer, No. 26	Feb.	11	600	Not found in 10 c. c.	Good
Stream, Towson run, 20 ft. below Bosley's run, A. M. Quick, No. 27	Feb.	11	10	Present in 10 c. c.	Bad

Stream, Towson run, 60 ft. below Bosley's run, A. M. Quick, No. 28	Feb.	11	1,200	Present in 10 c. c.	Bad
Towson run, 200 yds. below jail, Towson, A. M. Quick, No. 29	Feb.	11	120	Present in 10 c. c.	Bad
Stream, Towson run, 220 yds. below jail, Towson, A. M. Quick, No. 30	Feb.	11	3,000	Not found in 10 c. c.	Bad*
Stream, Towson run, at sand trap, A. M. Quick, No. 31	Feb.	11	3,000	Not found in 10 c. c.	Bad*
Stream, Towson run, 20 ft. above sand trap, A. M. Quick, No. 32	Feb.	11	3,000	Present in 10 c. c.	Bad
Well, T. W. Gist, iron pump, artesian well, Dr. C. R. Foutz, Westminster	Feb.	8	5	Not found in 10 c. c.	Good
Well, Jacksonville School, Dr. W. F. Hall, Crisfield	Feb.	25	600	Present in 10 c. c.	Bad
Spigot in kitchen, Dr. J. S. Green, Gittings, No. 1	Mar.	1	60	Not found in 10 c. c.	Good
Well, Dr. J. S. Green, Gittings, No. 2	Mar.	1	60	Not found in 10 c. c.	Good
Hydrant at barn, Dr. J. S. Green, Gittings, No. 3	Mar.	1	40	Not found in 10 c. c.	Good
Spigot, kitchen, W. M. Finney, Belair, No. 1	Mar.	1	120	Not found in 10 c. c.	Good
Spigot, artesian well, W. M. Finney, Belair, No. 2	Mar.	1	120	Not found in 10 c. c.	Good
Spigot, Belair waterworks, W. M. Finney, Belair, No. 3	Mar.	1	600	Not found in 10 c. c.	Good
Spigot, W. M. Finney's office, W. M. Finney, Belair, No. 4	Mar.	1	600	Present in 10 c. c.	Bad
Spigot in kitchen, Tome Institute, Port Deposit, Dr. Rich, No. 2	Mar.	12	10	Not found in 10 c. c.	Good
Spigot, Washington Hall, Tome Institute, Port Deposit, Dr. Rich, No. 3	Mar.	12	600	Present in 10 c. c.	Bad
Spigot, Junior Building, Tome Institute, Port Deposit, Dr. Rich, No. 4	Mar.	12	900	Not found in 10 c. c.	Fair
Well, Wheatley dairy, Falls road, near Bare Hill Sta., Dr. M. L. Price, No. 1	Mar.	19	600	Not found in 10 c. c.	Good
Well, Tonery dairy, Falls road, near Bare Hill Sta., Dr. M. L. Price, No. 2	Mar.	19	180	Not found in 10 c. c.	Good
Well, Mrs. Barrett's dairy, Mt. Washington, Dr. Price, No. 3	Mar.	19	900	Not found in 10 c. c.	Fair
Well, Fisher dairy, Mt. Washington, Dr. Price, No. 4	Mar.	19	360	Not found in 10 c. c.	Good
Foster's dye works, Cumberland, spigot, Dr. Brace, Cumberland, No. 1	Mar.	21	180	Not found in 10 c. c.	Good
Foster's dye works, Cumberland, spigot, 24 hrs. later, Dr. Brace, Cumbl'd No. 2	Mar.	21	360	Not found in 10 c. c.	Good
Well, Mechanics street, Cumberland, Dr. Brace, Cumberland, No. 3	Mar.	21	120	Not found in 10 c. c.	Good
Magruder's spring, Cumberland, Dr. Brace, Cumberland, No. 4	Mar.	21	600	Present in 10 c. c.	Bad
City spigot, Cumberland, Potomac river, Dr. Brace, Cumberland, No. 5	Mar.	21	480	Present in 10 c. c.	Bad
Well, Henry Lentz, Arlington, Dr. Naylor, Pikesville, No. 1	Mar.	21	480	Present in 10 c. c.	Bad
Well, De Kalb, Arlington, Dr. Naylor, Pikesville, No. 2	Mar.	21	600	Present in 10 c. c.	Bad
Well, Mrs. John Davis, Arlington, Dr. Naylor, Pikesville, No. 3	Mar.	21	120	Not found in 10 c. c.	Good
Well, Charles Gottels, Arlington, Dr. Naylor, Pikesville, No. 4	Mar.	21	480	Not found in 10 c. c.	Good
Well, J. H. Lentz, Arlington, Dr. Naylor, Pikesville, No. 5	Mar.	21	600	Not found in 10 c. c.	Good
Warfield's, C. H. Mannar, M. D., Rockville, No. 1	Mar.	21	240	Not found in 10 c. c.	Good
E. C. Peter, C. H. Mannar, M. D., Rockville, No. 2	Mar.	21	60	Not found in 10 c. c.	Good
R. B. Peter, C. H. Mannar, M. D., Rockville, No. 3	Mar.	21	480	Not found in 10 c. c.	Good
Prettyman, C. H. Mannar, M. D., Rockville, No. 4	Mar.	21	120	Not found in 10 c. c.	Good
Spigot, W. W. Finney, Belair, Dr. F. L. Hughes, Forest Hill, No. 1	Mar.	23	300	Not found in 10 c. c.	Good
Spigot, S. A. Williams, Belair, Dr. F. L. Hughes, Forest Hill, No. 2	Mar.	23	300	Not found in 10 c. c.	Good
Spigot, Register of Wills Office, Belair, Dr. F. L. Hughes, Forest Hill, No. 3	Mar.	23	120	Not found in 10 c. c.	Good
Spigot, Belair Drug Store, Dr. F. L. Hughes, Forest Hill, No. 4	Mar.	23	180	Not found in 10 c. c.	Good
Spigot, Second National Bank, Belair, Dr. F. L. Hughes, Forest Hill, No. 5	Mar.	23	240	Not found in 10 c. c.	Good
Spigot, W. H. Harlan, Belair, Dr. F. L. Hughes, Forest Hill, No. 6	Mar.	23	900	Not found in 10 c. c.	Fair
Spring, Mrs. M. G. Battaile, Lynhurst, Edmondson ave. and 19th st.	Mar.	30	120	Not found in 10 c. c.	Good
Well, T. J. Coonan, Westminster	April	4	360	Not found in 10 c. c.	Good
Spigot, city water supply, G. A. Pearre, No. 2	April	3	300	Not found in 10 c. c.	Good
Cistern on premises, G. A. Pearre, Cumberland, No. 3	April	3	60	Not found in 10 c. c.	Good
Raw water, Susquehanna river, Havre de Grace, A. M. Quick, No. 1	April	8	1,800	Present in 10 c. c.	Bad
Tap, North filter, Havre de Grace, A. M. Quick, No. 2	April	8	1,200	Not found in 10 c. c.	Suspicious*

TABLE No. 2—CONTINUED.

Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Tap, South filter, Havre de Grace, A. M. Quick, No. 3	April 8	1,200	Not found in 10 c. c.	Suspicious*
Effluent, North filter, Havre de Grace, A. M. Quick, No. 4	April 8	20	Not found in 10 c. c.	Good
Effluent, South filter, Havre de Grace, A. M. Quick, No. 5	April 8	30	Not found in 10 c. c.	Good
Tap in engine-room, Havre de Grace, A. M. Quick, No. 6	April 8	120	Not found in 10 c. c.	Good
Spring, Stegmaier's house, Cumberland, Dr. Brace, No. 1	April 17	720	Not found in 10 c. c.	Good
Spring, Stegmaier's barn, Cumberland, Dr. Brace, No. 2	April 17	120	Not found in 10 c. c.	Good
Well, Cumberland Laundry, Cumberland, Dr. Brace, No. 3	April 17	120	Not found in 10 c. c.	Good
Well, Blank's, Cumberland, Dr. Brace, No. 4	April 17	1,800	Not found in 10 c. c.	Fair
Well, King's, Cumberland, Dr. Brace, No. 5	April 17	1,800	Present in 10 c. c.	Bad
Well, Gletzs', Cumberland, Dr. Brace, No. 6	April 17	1,550	Not found in 10 c. c.	Suspicious*
Well, Paca street, Cumberland, Dr. Brace, No. 7	April 17	240	Not found in 10 c. c.	Good
Spigot, kitchen, Tome Institute, Port Deposit, Dr. H. L. Rich, No. 1	April 20	60	Not found in 10 c. c.	Good
Spigot, Washington Building, Port Deposit, Dr. H. L. Rich, No. 2	April 20	300	Present in 10 c. c.	Bad
Spigot, Carson's drug store, Port Deposit, Dr. H. L. Rich, No. 5	April 20	5	Not found in 10 c. c.	Good
Sudler's pharmacy, Sudlersville, Dr. Foster Sudler	April 20	2,500	Not found in 10 c. c.	Suspicious*
Valley street, Cumberland, Dr. C. H. Brace, No. 1	May 8	900	Present in 10 c. c.	Bad
Payne's spring, Cumberland, Dr. C. H. Brace, No. 2	May 8	900	Present in 10 c. c.	Bad
Stephen's well, Cumberland, Dr. C. H. Brace, No. 3	May 8	720	Present in 10 c. c.	Bad
Blue spring, Cumberland, Dr. C. H. Brace, No. 4	May 8	72	Present in 10 c. c.	Bad
Gramlick spring, Cumberland, Dr. C. H. Brace, No. 5	May 8	600	Not found in 10 c. c.	Good
Green street, Cumberland, Dr. C. H. Brace, No. 6	May 8	240	Not found in 10 c. c.	Good
Electric light, Cumberland, Dr. C. H. Brace, No. 7	May 8	600	Not found in 10 c. c.	Good
Goethe street, Cumberland, Dr. C. H. Brace, No. 8	May 8	480	Present in 10 c. c.	Bad
Decatur street, Cumberland, Dr. C. H. Brace, No. 9	May 8	900	Present in 10 c. c.	Bad
Bedford street, Cumberland, Dr. C. H. Brace, No. 10	May 8	300	Present in 10 c. c.	Bad
Well, Harry Willis, Betterton, Dr. W. S. Maxwell, Still Pond, No. 1	May 10	600	Not found in 10 c. c.	Good
Spring, Arthur Simma, Providence, A. M. Quick, No. 33	May 10	5	Not found in 10 c. c.	Good
Pump, Providence School, A. M. Quick, No. 34	May 10	360	Not found in 10 c. c.	Good
Spring, Sabillasville, Dr. C. L. Wachter, No. 1	May 10	10	Not found in 10 c. c.	Good
Ice, Sabillasville, Dr. C. L. Wachter, No. 2	May 10	2,500	Not found in 10 c. c.	Suspicious*
Spigot, basement, Tome Institute, Port Deposit, Dr. H. L. Rich, No. 1	May 17	20	Not found in 10 c. c.	Good
Spigot, Washington Hall, Tome Institute, Port Deposit, Dr. H. L. Rich, No. 3	May 17	360	Present in 10 c. c.	Bad
Spigot, Junior Hall, Tome Institute, Port Deposit, Dr. H. L. Rich, No. 4	May 17	360	Present in 10 c. c.	Bad
Spigot, Carson's drug store, Port Deposit, Dr. H. L. Rich, No. 6	May 17	5	Not found in 10 c. c.	Good
Well, E. F. Lawrence, Catonsville, Dr. C. L. Mattfeldt	May 17	180	Present in 10 c. c.	Bad
Dr. Bordley, Dr. Marshall L. Price, State Board of Health	May 17	2,500	Not found in 10 c. c.	Suspicious*
Spring, Miss L. J. Simms, Providence, A. M. Quick, No. 35	May 18	30	Not found in 10 c. c.	Good
Well, W. R. Carpenter, Hyattsville, Dr. Guy Latimer, Hyattsville	May 22	1,200	Not found in 10 c. c.	Suspicious*
Spring, Andrew Reese, Dr. T. J. Coonan, Westminster, No. 1	May 22	700	Not found in 10 c. c.	Good
Barn well, Andrew Reese, Dr. T. J. Coonan, Westminster, No. 2	May 22	700	Not found in 10 c. c.	Good

House well, Andrew Reese, Dr. T. J. Coonan, Westminster, No. 3	May	22	600	Present in 10 c. c.	Bad
Well, Mrs. Ennis, Burkettsville, Dr. George W. Yourtee, No. 1	May	22	900	Present in 10 c. c.	Bad
Well, formerly infected, Hopewell, Burkettsville, Dr. G. W. Yourtee, No. 2	May	22	2,500	Present in 10 c. c.	Bad
Well, Wm. Hightman, Burkettsville, Dr. G. W. Yourtee, No. 3	May	22	2,500	Present in 10 c. c.	Bad
Well, Mrs. Biser, Burkettsville, Dr. G. W. Yourtee, No. 4	May	22	900	Present in 10 c. c.	Bad
Well, M. Arnold, Burkettsville, Dr. G. W. Yourtee, No. 5	May	22	1,200	Not found in 10 c. c.	Fair
Well, Mrs. Corder, Burkettsville, Dr. G. W. Yourtee, No. 6	May	22	1,200	Not found in 10 c. c.	Fair
Well, M. Pfiffer, Burkettsville, Dr. G. W. Yourtee, No. 7	May	22	720	Present in 10 c. c.	Bad
Cistern, M. L. Horine, Burkettsville, Dr. G. W. Yourtee, No. 8	May	22	300	Not found in 10 c. c.	Good
Well, E. Horine, Burkettsville, Dr. G. W. Yourtee, No. 9	May	22	1,500	Not found in 10 c. c.	Suspicious*
Well, Wm. Gaver, Burkettsville, Dr. G. W. Yourtee, No. 10	May	22	720	Present in 10 c. c.	Bad
Well, J. N. Korh, Dr. Chas. R. Foutz, Westminster, No. 1	May	24	360	Present in 10 c. c.	Bad
Artesian well, Cold Storage Co., Dr. Foutz, Westminster, No. 2	May	24	600	Not found in 10 c. c.	Good
Spigot, H. R. Cameron, drug store, Port Deposit, D. R. Armstrong, No. 1	June	3		Bottle arrived broken	
Spigot, C. Blackburn, Port Deposit, D. R. Armstrong, No. 2	June	3	60	Not found in 10 c. c.	Good
Spigot, Postoffice, Port Deposit, D. R. Armstrong, No. 3	June	3	120	Not found in 10 c. c.	Good
Spigot, L. Bloomberg, Port Deposit, D. R. Armstrong, No. 4	June	3	600	Not found in 10 c. c.	Good
Spigot, Carson's pharmacy, Port Deposit, D. R. Armstrong, No. 5	June	3	120	Present in 10 c. c.	Bad
Spigot, L. F. Williams, Port Deposit, D. R. Armstrong, No. 6	June	3	600	Present in 10 c. c.	Bad
Fountain, Port Deposit, D. R. Armstrong, No. 7	June	3	1,200	Present in 10 c. c.	Bad
Fountain, Port Deposit, D. R. Armstrong, No. 8	June	3	600	Present in 10 c. c.	Bad
Todd poolroom, Port Deposit, D. R. Armstrong, No. 9	June	3	60	Not found in 10 c. c.	Good
Scott-Wilson hardware store, Port Deposit, D. R. Armstrong, No. 10	June	3	180	Present in 10 c. c.	Bad
Well, Melrose Hotel, Dr. J. S. Ziegler, Melrose, No. 1	June	10	120	Present in 10 c. c.	Bad
Well, Melrose Hotel, Dr. J. S. Ziegler, Melrose, No. 2	June	10	600	Not found in 10 c. c.	Good
Melted ice, L. Miller, Sabillasville, Dr. C. L. Wachter, No. 1	June	3	2,500	Not found in 10 c. c.	Suspicious*
Spring, L. Miller, Sabillasville, Dr. C. L. Wachter, No. 2	June	3	10	Not found in 10 c. c.	Good
Pump, L. F. Slade, Lutherville, A. M. Quick, No. 36	June	7	3,000	Present in 10 c. c.	Bad
Well, house, Andrew Reese, Westminster, Dr. C. R. Foutz, No. 1	June	10	900	Present in 10 c. c.	Bad
Well, barn, Andrew Reese, Westminster, Dr. C. R. Foutz, No. 2	June	10	600	Present in 10 c. c.	Bad
Well, house, G. R. Brown, Westminster, Dr. C. R. Foutz, No. 3	June	10	600	Present in 10 c. c.	Bad
R. L. Tyson, Frederick, Md.	June	25	600	Not found in 10 c. c.	Fair
Ice from Easton, Penniman & Browne	June	25	2	Not found in 10 c. c.	Good
Spring on place of Dr. T. Smith, Catonsville, July	July	5	100	Not found in 10 c. c.	Good
Well on Clark place, Dr. G. N. Hocking, Govanstown	July	5	2,300	Present in 10 c. c.	Bad
Dam, power-house, Dr. C. C. Clarke, Springfield, No. 1	July	5	1,800	Present in 10 c. c.	Bad†
Servants' building, men's group, Dr. C. C. Clarke, Springfield, No. 2	July	5	153	Not found in 10 c. c.	Good
Artesian well, men's group, Dr. C. C. Clarke, Springfield, No. 3	July	5	12	Not found in 10 c. c.	Good
Servants' building, women's group, Dr. C. C. Clarke, Springfield, No. 4	July	5	42	Not found in 10 c. c.	Good
Spring, women's group, Dr. C. C. Clarke, Springfield, No. 5	July	5	105	Not found in 10 c. c.	Good
T. R. Peddicord, Cooksville	July	11	....	Present in 10 c. c.	Bad
T. R. Peddicord, Cooksville	July	11	....	Present in 10 c. c.	Bad
Spigot, Reed, city water, Ocean City, No. 1	July	13	100	Not found in 10 c. c.	Good
Artesian well, Doyle cottage, Ocean City, No. 2	July	13	1,700	Not found in 10 c. c.	Fair
Well, Forwein cottage, Ocean City, No. 3	July	13	1,000	Not found in 10 c. c.	Good
Artesian well, Hamilton, Ocean City, No. 4	July	13	600	Not found in 10 c. c.	Good
Artesian well, Newton, Ocean City, No. 5	July	13	500	Not found in 10 c. c.	Good

TABLE No. 2—CONTINUED.

Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
McClean Cottage, Ocean City, No. 6	July 15	1,600	Present in 10 c. c.	Bad
Artesian well, Plinhimmon, Ocean City, No. 7	July 13	2,000	Not found in 10 c. c.	Fair
Mt. Pleasant, Ocean City, No. 8	July 13	2,300	Not found in 10 c. c.	Fair
Spigot, Atlantic Hotel, Ocean City, No. 9	July 13	100	Not found in 10 c. c.	Good
Artesian well, Seaside, Ocean City, No. 10	July 13	300	Not found in 10 c. c.	Good
Head race, Rockland black and dye works, C. Mitten, No. 1	July 24	1,300	Not found in 1 c. c.	Suspicious*
End of tail race, Rockland black and dye works, C. Mitten, No. 2	July 24	2,200	Present in 10 c. c.	Bad
Jones' Falls, Rockland, C. Mitten, No. 3	July 24	1,300	Present in 10 c. c.	Bad
Well, A. D. Reese, Westminster, No. 1	July 31	9,000	Not found in 10 c. c.	Suspicious
Well, A. D. Reese, Westminster, No. 2	July 31	500,000	Present in 10 c. c.	Very Bad
Well, R. W. Baldwin, Lutherville	July 31	1,200	Not found in 10 c. c.	Fair
Stream, old receiver, Dr. I. J. McCurdy, Frederick, No. 1	Aug. 2	1,800	Not found in 10 c. c.	Suspicious
Stream, Tuscarora receiver, Dr. I. J. McCurdy, Frederick, No. 2	Aug. 2	700	Present in 10 c. c.	Bad
Stream, Big Tuscarora, Dr. I. J. McCurdy, Frederick, No. 3	Aug. 2	900	Present in 10 c. c.	Bad
Stream, Little Tuscarora, Dr. I. J. McCurdy, Frederick, No. 4	Aug. 2	800	Present in 1 and 10 c. c.	Very Bad
Stream, Fishing creek, Dr. I. J. McCurdy, Frederick, No. 5	Aug. 2	500,000	Present in 10 c. c.	Very Bad.
City reservoir, Dr. I. J. McCurdy, Frederick, No. 6	Aug. 2	300	Not found in 10 c. c.	Good
Riehl's city spring, Dr. I. J. McCurdy, Frederick, No. 7	Aug. 2	9,000	Present in 1 and 10 c. c.	Very Bad
Hydrant, Dr. I. J. McCurdy, Frederick, No. 8	Aug. 2	500	Not found in 10 c. c.	Fair
Well, Howard Warfield, Cockeysville, Dr. D. B. Sprecher, Sykesville, No. 1	Aug. 8	900	Present in 1 and 10 c. c.	Very Bad
Spring No. 1, H. Warfield, Cockeysville, Dr. D. B. Sprecher, Sykesville, No. 2	Aug. 8	300	Present in 10 c. c.	Bad
Well No. 2, H. Warfield, Cockeysville, Dr. D. B. Sprecher, Sykesville, No. 3	Aug. 8	400	Present in 1 and 10 c. c.	Very Bad
Spring No. 2, H. Warfield, Cockeysville, Dr. D. B. Sprecher, Sykesville, No. 4	Aug. 8	300	Present in 1 c. c.	Very Bad
Well, J. W. Benson, Glyndon, Dr. T. R. Payne	Aug. 8	10,000	Not found in 10 c. c.	Suspicious
Spigot, kitchen, Dr. Bowen, Dr. Price, No. 1	Aug. 16	100,000	Present in 10 c. c.	Bad
Well, Dr. Bowen, Dr. Price, No. 2	Aug. 16	1,200	Present in 10 c. c.	Bad
Well, Dr. Todd, Dr. Price, No. 3	Aug. 16	100,000	Present in 10 c. c.	Bad
Cromwell well, Dr. Price, No. 4	Aug. 16	100,000	Not found in 10 c. c.	Suspicious
Wandey well, Dr. Price, No. 5	Aug. 16	800	Present in 10 c. c.	Bad
Well, Mt. Washington Country Club, Dr. Price, No. 6	Aug. 16	400	Not found in 10 c. c.	Fair
Artesian well, Mt. Washington water works, Dr. Price, No. 7	Aug. 16	100,000	Not found in 10 c. c.	Suspicious
Spigot, kitchen, Mt. Washington water works, Dr. Price, No. 8	Aug. 16	900	Present in 10 c. c.	Bad
Artesian well, Chestnut Hill, Dr. Price, No. 9	Aug. 16	6,000	Not found in 10 c. c.	Fair
Artesian well, No. 4, Mt. Washington water works, Dr. Price, No. 10	Aug. 16	300	Not found in 10 c. c.	Good
Owen's well, Dr. Price, No. 11	Aug. 16	600	Not found in 10 c. c.	Good
Gristable's kitchen spigot, Mt. Washington water works, Dr. Price, No. 12	Aug. 16	300	Not found in 10 c. c.	Suspicious
Well, Frank H. Calloway, Liberty road, West Forest Park, Dr. Naylor	Aug. 16	5,000	Present in 10 c. c.	Bad
Drinking water, Saunder's range	Aug. 16	300	Not found in 10 c. c.	Good
Drinking water, Quarantine	Aug. 14	....	Not found in 10 c. c.	Suspicious‡
E. C. Garret, Elkridge, Dr. W. R. Eareckson	Aug. 14	3,000	Not found in 10 c. c.	Suspicious

Well No. 1, S. D. Senseney, Union Bridge	Aug. 27	100,000	Not found in 10 c. c.	Suspicious
Spigot, S. D. Senseney, Union Bridge	Aug. 27	100,000	Present in 10 c. c.	Very Bad
Well No. 2, S. D. Senseney, Union Bridge	Aug. 27	12,000	Not found in 10 c. c.	Suspicious*
Well, C. H. F. Scofield, Laurel	Aug. 27	1,800	Present in 10 c. c.	Bad
Well, Mr. Aholt, Laurel	Aug. 27	9,500	Present in 10 c. c.	Bad
Well, W. H. Feige, Laurel	Aug. 27	15,000	Present in 10 c. c.	Very Bad
Dr. W. F. Taylor, Laurel	Aug. 27	9,000	Not found in 10 c. c.	Suspicious
Stephen Kelly, Dr. Guy Latimer, Hyattsville, No. 1	Aug. 27	5,400	Not found in 10 c. c.	Fair
Johnson, Dr. Guy Latimer, Hyattsville, No. 2	Aug. 27	6,000	Not found in 10 c. c.	Suspicious
Dr. Guy Latimer, Hyattsville, No. 3	Aug. 27	500	Not found in 10 c. c.	Suspicious
Public water supply, Dr. Guy Latimer, Hyattsville, No. 4	Aug. 27	600	Present in 10 c. c.	Bad
Sudbrook	Sept. 5	300	Not found in 10 c. c.	Suspicious
Well, R. A. Merrick, Arlington, C. Mitten	Sept. 5	1,200	Not found in 10 c. c.	Suspicious
City water, No. 2, Tristate sanitary dairy	Sept. 5	100	Not found in 10 c. c.	Suspicious
Woods	Sept. 5	100,000	Not found in 10 c. c.	Suspicious
No. 8 Pear alley, across railroad track, Cumberland, Dr. Brace	Sept. 5	250	Present in 10 c. c.	Bad
Kitchen, Pear alley, Cumberland, Dr. Brace	Sept. 5	100	Present in 10 c. c.	Bad
Well on Market street, Cumberland, Dr. Brace	Sept. 5	100	Present in 10 c. c.	Bad
Well on Gortha street, Cumberland, Dr. Brace	Sept. 5	100	Not found in 10 c. c.	Fair
Well, Decatur and Fulton streets, Cumberland, Dr. Brace	Sept. 5	200	Present in 10 c. c.	Bad
Sandy spring, water from wagon, Cumberland, Dr. Brace	Sept. 5	200	Not found in 10 c. c.	Suspicious
Bedford street extended, Cumberland, Dr. Brace	Sept. 5	100	Present in 10 c. c.	Bad
Columbia and Know streets, Cumberland, Dr. Brace	Sept. 5	750	Present in 10 c. c.	Bad
Bond well, Center and Bedford streets, Cumberland, Dr. Brace	Sept. 5	1,200	Present in 10 c. c.	Bad
City water, Cumberland, Dr. Brace	Sept. 5	200	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 1	Sept. 5	Liquef.	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 2	Sept. 5	Liquef.	Present in 10 c. c.	Bad
Herring Run, above quarry and pigpen, No. 1, Dr. Price	Sept. 5	720	Present in 10 c. c.	Bad
Herring Run, Harford avenue and railway bridge, No. 2, Dr. Price	Sept. 5	540	Present in 10 c. c.	Bad
Montevue Hospital, spring, Frederick	Sept. 5	Liquef.	Present in 10 c. c.	Bad
Montevue Hospital, spring, Frederick	Sept. 5	Liquef.	Present in 10 c. c.	Bad
Spring, A. D. Reese, Westminster, C. N. Mitten	Sept. 11	60	Present in 10 c. c.	Bad
Well, Frank Classon, Westminster, Dr. Charles Foutz	Sept. 11	75	Present in 10 c. c.	Bad
Spring, R. B. Bennett, Dr. D. B. Sprecher, Sykesville, No. 1	Sept. 16	Liquef.	Not found in 10 c. c.	Suspicious
Harman dwelling, Dr. D. B. Sprecher, Sykesville, No. 2	Sept. 16	1,500	Not found in 10 c. c.	Suspicious*
Reservoir, Dr. D. B. Sprecher, Sykesville, No. 3	Sept. 16	10,000	Not found in 10 c. c.	Bad*
Well, W. H. Bennett, Dr. D. B. Sprecher, Sykesville, No. 4	Sept. 16	7,200	Present in 10 c. c.	Very Bad
Well, R. W. Carter, Dr. D. B. Sprecher, Sykesville, No. 5	Sept. 16	Liquef.	Present in 10 c. c.	Very Bad
Fountain, Rebecca Parks, Brightside, A. M. Quick, No. 40	Sept. 20	420	Present in 10 c. c.	Bad†
Spring, Rebecca Parks, Brightside, A. M. Quick, No. 41	Sept. 20	360	Present in 10 c. c.	Bad
Well, Dr. J. Frank Jones, Greensboro	Sept. 20	6,000	Not found in 10 c. c.	Suspicious§
Spigot, men's group, Springfield State Hospital, No. 1	Sept. 20	Liquef.	Not found in 10 c. c.	Good
Stream, dam, Springfield State Hospital, No. 2	Sept. 20	Liquef.	Not found in 10 c. c.	Bad‡
Spring, Buttercup cottage, Springfield State Hospital, No. 3	Sept. 20	Liquef.	Not found in 10 c. c.	Good
Spring, women's group, Springfield State Hospital, No. 4	Sept. 20	900	Not found in 10 c. c.	Fair
Artesian well, men's group, Springfield State Hospital, No. 5	Sept. 20	Liquef.	Not found in 10 c. c.	Good
Spring, power-house, Springfield State Hospital, No. 6	Sept. 20	Liquef.	Present in 10 c. c.	Bad

TABLE No. 2—Continued.

Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Cistern, W. H. Grabenstein, Dr. Brace, Cumberland, No. 1	Sept. 20	600	Present in 10 c. c.	Bad
Well, Columbia avenue, Dr. Brace, Cumberland, No. 2	Sept. 20	300	Not found in 10 c. c.	Good
Well, Stegmier, Dr. Brace, Cumberland, No. 3	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Well, G. P. Harmon, Dr. Williams, Elkridge, No. 1	Sept. 20	300	Not found in 10 c. c.	Good
Well, G. W. Hobbs, Dr. Williams, Elkridge, No. 2	Sept. 20	300	Not found in 10 c. c.	Suspicious¶
Well, J. H. Reson, Dr. Williams, Elkridge, No. 3	Sept. 20	400	Present in 10 c. c.	Bad
Cistern, Charles Round, Dr. Williams, Elkridge, No. 4	Sept. 20	750	Present in 10 c. c.	Bad
Well, E. A. Hartle, Dr. Williams, Elkridge, No. 5	Sept. 20	600	Present in 10 c. c.	Bad
Well, Anderson, Dr. Williams, Elkridge, No. 6	Sept. 20	300	Not found in 10 c. c.	Good
Artesian well, S. D. Senseney, Dr. Charles Foutz, Westminster, No. 1	Sept. 20	350	Not found in 10 c. c.	Fair
Well No. 4, Union Bridge, Dr. Charles Foutz, Westminster, No. 2	Sept. 20	700	Present in 10 c. c.	Bad
Spigot, Stauffer, Dr. Charles Foutz, Westminster, No. 3	Sept. 20	250	Present in 10 c. c.	Bad
Well, Albert Fowble, Dr. Charles Foutz, Westminster, No. 4	Sept. 20	350	Present in 10 c. c.	Bad
Well No. 3, Union Bridge, Dr. Charles Foutz, Westminster, No. 5	Sept. 20	650	Present in 10 c. c.	Bad
Well No. 5, Union Bridge, Dr. Charles Foutz, Westminster, No. 6	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Well No. 1, Union Bridge, Dr. Charles Foutz, Westminster, No. 7	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Well No. 2, Union Bridge, Dr. Charles Foutz, Westminster, No. 8	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Spigot, S. D. Senseney, Dr. Charles Foutz, Westminster, No. 9	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Reservoir, Union Bridge, Dr. Charles Foutz, Westminster, No. 10	Sept. 20	Liquef.	Present in 10 c. c.	Bad
Tank (well), R. G. Nicholson, Dr. Simpers, Chestertown, No. 1	Sept. 20	Liquef.	Not found in 10 c. c.	Good
Well No. 2, R. G. Nicholson, Dr. Simpers, Chestertown, No. 2	Sept. 20	6,000	Not found in 10 c. c.	Suspicious*
Well, Nicholson's farm, Dr. Simpers, Chestertown, No. 4	Sept. 20	Liquef.	Not found in 10 c. c.	Suspicious
Spring, artesian well, city supply, Dr. Simpers, Chestertown, No. 5	Sept. 20	1,800	Not found in 10 c. c.	Suspicious
Kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 1	Sept. 30	No count	Not found in 10 c. c.	Fair
Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 2	Sept. 30	No count	Not found in 10 c. c.	Fair
Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 3	Sept. 30	No count	Present in 10 c. c.	Bad
Junior Building, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 4	Sept. 30	No count	Present in 10 c. c.	Bad
Well, A. Lucker, Dr. King, Barstow, No. 1	Sept. 30	720	Present in 10 c. c.	Bad
Well, Frank Lusby, Dr. King, Barstow, No. 2	Sept. 30	100,000	Present in 10 c. c.	Very Bad
Well, Morris Lusby, Dr. King, Barstow, No. 3	Sept. 30	1,800	Present in 10 c. c.	Bad
Well, David Robonson, Dr. King, Barstow, No. 4	Sept. 30	4,800	Present in 10 c. c.	Very Bad
Well, Earney Wood, Dr. King, Barstow, No. 5	Sept. 30	9,600	Present in 10 c. c.	Very Bad
Well, J. W. Young, Dr. King, Barstow, No. 6	Sept. 30	10,000	Present in 10 c. c.	Very Bad
Spigot, Dr. King, Barstow, No. 7	Sept. 30	1,200	Present in 10 c. c.	Very Bad
Spring, Quarantine	Sept. 30	Liquef.	Not found in 1 c. c.	Suspicious
Artesian well, Quarantine	Sept. 30	Liquef.	Not found in 1 c. c.	Good
Pump, L. A. Gordon, Towson, A. M. Quick, No. 43	Oct. 14	2,400	Present in 1 c. c.	Bad
Pump, A. Weinmaster, Towson, A. M. Quick, No. 44	Oct. 14	480	Present in 1 c. c.	Bad
Spring, Andrew Reese, Westminster, C. Mitten, No. 1	Oct. 7	360	Not found in 10 c. c.	Good
Spring, Andrew Reese, Westminster, C. Mitten, No. 2	Oct. 7	200	Not found in 10 c. c.	Good

Dr. H. F. Cassidy, Roland Park	Oct.	7	5,000	Not found in 1 c. c.	Bad*
Tank, R. G. Nicholson, Chestertown, No. 1	Oct.	7	100	Present in 10 c. c.	Bad
Spring, Walter Ellison, Chestertown, No. 2	Oct.	7	240	Present in 10 c. c.	Bad
Running stream, R. G. Nicholson, Chestertown, No. 3	Oct.	7	300	Present in 10 c. c.	Bad
Main well, R. G. Nicholson, Chestertown, No. 4	Oct.	7	200	Present in 10 c. c.	Bad
Unused well, R. G. Nicholson, Chestertown, No. 5	Oct.	7	3,800	Present in 10 c. c.	Bad
Spring, T. Freeland, Ashland, A. M. Quick, No. 45	Oct.	14	636	Present in 1 c. c.	Bad
Pump, T. Freeland, Ashland, A. M. Quick, No. 46	Oct.	14	822	Present in 1 c. c.	Bad
Well, Lease, Dr. McCurdy, Frederick, No. 1	Oct.	14	300	Not found in 1 c. c.	Fair
Well, Lewis, Dr. McCurdy, Frederick, No. 2	Oct.	14	100	Not found in 1 c. c.	Good
Well, Brown, Dr. McCurdy, Frederick, No. 3	Oct.	14	1,536	Present in 1 c. c.	Very Bad
Spring, Stine, Dr. McCurdy, Frederick, No. 4	Oct.	14	1,080	Present in 1 c. c.	Very Bad
Well, Dutrow, Dr. McCurdy, Frederick, No. 5	Oct.	14	240	Present in 1 c. c.	Bad
Spigot, fountain, North Market street, Dr. McCurdy, Frederick, No. 6	Oct.	14	300	Present in 1 c. c.	Bad
Well, Newman, Dr. McCurdy, Frederick, No. 7	Oct.	14	180	Present in 1 c. c.	Bad
Well, August, Dr. McCurdy, Frederick, No. 8	Oct.	14	No count	Not found in 1 c. c.	Good
Spigot, Dr. McCurdy, Frederick, No. 9	Oct.	14	540	Present in 1 c. c.	Bad
Well, Bentley, Dr. Naylor, Pikesville, No. 1	Oct.	14	4,200	Not found in 1 c. c.	Suspicious*
Well, Otto, Dr. Naylor, Pikesville, No. 2	Oct.	14	Liquef.	Present in 1 c. c.	Bad
Well, Hamilton, Dr. Naylor, Pikesville, No. 3	Oct.	14	2,100	Present in 1 c. c.	Very Bad
Well, Hook, Arlington, Dr. Naylor, Pikesville, No. 4	Oct.	14	3,500	Not found in 1 c. c.	Suspicious*
Well, kitchen, Hook, Arlington, Dr. Naylor, Pikesville, No. 5	Oct.	14	4,800	Present in 1 c. c.	Very Bad
State pump, Hook, Arlington, Dr. Naylor, Pikesville, No. 6	Oct.	14	Liquef.	Present in 1 c. c.	Bad
Town supply, Dr. Guy Latimer, Hyattsville, No. 1	Oct.	14	12	Not found in 1 c. c.	Good
John Smith, Dr. Guy Latimer, Hyattsville, No. 2	Oct.	14	Liquef.	Not found in 1 c. c.	Fair
Spring, Dr. J. W. Harrison, Middle river, No. 1	Oct.	14	Liquef.	Present in 1 c. c.	Bad
Pump, Daniel Bond, A. M. Quick, No. 47	Oct.	14	Liquef.	Present in 1 c. c.	Bad
Spigot, Beechel street, Dr. C. R. Sheller, Hagerstown, No. 1	Oct.	14	5,400	Not found in 1 c. c.	Suspicious*
Spigot, West Franklin street, Dr. C. R. Scheller, Hagerstown, No. 2	Oct.	14	Liquef.	Not found in 1 c. c.	Fair
Spigot, South Potomac street, Dr. C. R. Scheller, Hagerstown, No. 3	Oct.	14	2,400	Not found in 1 c. c.	Suspicious*
Spigot, East Baltimore street, Dr. C. R. Scheller, Hagerstown, No. 4	Oct.	14	5,000	Present in 1 c. c.	Very Bad
Spigot, South Mulberry street, Dr. C. R. Scheller, Hagerstown, No. 5	Oct.	14	6,000	Not found in 1 c. c.	Suspicious*
Spigot, North Potomac street, Dr. C. R. Scheller, Hagerstown, No. 6	Oct.	14	1,500	Not found in 1 c. c.	Suspicious*
Spigot, East Franklin street, Dr. C. R. Scheller, Hagerstown, No. 7	Oct.	14	3,600	Present in 1 c. c.	Very Bad
Spigot, kitchen, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 3	Oct.	14	3,000	Not found in 1 c. c.	Suspicious*
Spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 4	Oct.	14	540	Not found in 1 c. c.	Fair
Spigot, Washington Hall, Tome Inst., Dr. H. L. Rich, Port Deposit, No. 5	Oct.	14	3,000	Present in 1 c. c.	Very Bad
Spigot, Carson's drug store, Dr. H. L. Rich, Port Deposit, No. 6	Oct.	14	300	Not found in 1 c. c.	Fair
Spigot, Junior Building, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 8	Oct.	14	2,040	Present in 1 c. c.	Very Bad
Well, Samuel Young, Bowen, Dr. I. N. King, Barstow, No. 1	Oct.	14	1,120	Not found in 1 c. c.	Suspicious*
Well, Joseph Young, Bowen, Dr. I. N. King, Barstow, No. 2	Oct.	14	240	Not found in 1 c. c.	Good
Spigot, S. J. Harnett, Adelina, Dr. I. N. King, Barstow, No. 3	Oct.	14	60	Present in 1 c. c.	Bad
Mrs. Fannie Brooks, Mistrial, Dr. I. N. King, Barstow, No. 4	Oct.	14	600	Present in 1 c. c.	Bad
W. A. Little, Buena Vista, Dr. I. N. King, Barstow, No. 5	Oct.	14	420	Present in 1 c. c.	Bad
Jack Robinson, Barstow, Dr. I. N. King, Barstow, No. 6	Oct.	14	300	Not found in 1 c. c.	Good
Spring, Leroy Ensor, Stablersville, A. M. Quick, No. 53	Oct.	29	6,400	Present in 1 c. c.	Very Bad
Spring, Leroy Ensor, Parkton, A. M. Quick, No. 51	Oct.	29	15,000	Present in 1 c. c.	Very Bad

TABLE No. 2—CONTINUED.

Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Spring, Martha Burns, Parkton, A. M. Quick, No. 50	Oct. 29	3,000	Present in 1 c. c.	Very Bad
Spring, Rolie Williams, Stablersville, A. M. Quick, No. 48	Oct. 29	20,000	Present in 1 c. c.	Very Bad
Spring, Roy Almony, Stablersville, A. M. Quick, No. 52	Oct. 29	2,500	Present in 10 c. c.	Very Bad
Spring, Reuben Wright, Stablersville, A. M. Quick, No. 49	Oct. 29	7,290	Present in 1 c. c.	Very Bad
Mrs. W. Rocks, Fullerton	Oct. 21	72	Not found in 1 c. c.	Good
Spring, W. S. Drasch, New Windsor, C. N. Mitten, No. 1	Oct. 21	16	Not found in 1 and 10 c. c.	Good
Pump, Eli Talbot, Whitehall, A. M. Quick, No. 54	Oct. 29	46	Not found in 10 c. c.	Good
Spring, Mrs. Howard Ridgely, Towson. A. M. Quick, No. 55	Oct. 29	126	Present in 10 c. c.	Bad
J. I. Lovell, Dr. H. A. Naylor, Pikesville	Oct. 29	16	Not found in 10 c. c.	Good
Well, C. A. Bender, Grantville	Oct. 29	Not made	Present in 10 c. c.	Bad
Cambridge, Wolfe & Naylor, Postoffice pharmacy, No. 2	Oct. 29	42	Not found in 10 c. c.	Good
Artesian well at pumping station, Cambridge water works, No. 1	Oct. 29	14	Not found in 10 c. c.	Good
Kitchen spigot, W. S. Ford, Cambridge, No. 3	Oct. 29	36	Present in 10 c. c.	Bad
Water from shipyard, Cook, Cambridge, No. 4	Oct. 29	600	Present in 10 c. c.	Very Bad
Well, Mrs. Lootha, East Cambridge, No. 5	Oct. 29	126	Not found in 10 c. c.	Good
Surface well, Mrs. McVannee, Cambridge, No. 6	Oct. 29	400	Not found in 10 c. c.	Fair
Pump, J. F. Quail, Dr. W. T. Henry, Stevensville, No. 1	Nov. 1	420	Present in 10 c. c.	Bad
Well, M. Smith, Dr. W. T. Henry. Stevensville, No. 2	Nov. 1	126	Present in 10 c. c.	Bad
Pump, L. F. Vansant, Dr. W. T. Henry, Stevensville, No. 3	Nov. 1	1,536	Present in 10 c. c.	Very Bad
Pump, R. H. M. Neal, Dr. W. T. Henry, Stevensville, No. 4	Nov. 1	5,000	Not found in 10 c. c.	Suspicious*
Pump, Joe Parks, Dr. W. T. Henry, Stevensville, No. 5	Nov. 1	300	Not found in 10 c. c.	Good
Cistern, Dr. W. T. Henry, Stevensville, No. 6	Nov. 1	4,800	Not found in 10 c. c.	Suspicious*
Kitchen spigot, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 1	Nov. 1	12	Not found in 10 c. c.	Good
Spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 4	Nov. 1	10	Not found in 10 c. c.	Good
Spigot, Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 5	Nov. 1	128	Not found in 10 c. c.	Good
Soda fountain, Carson's pharmacy, Dr. H. L. Rich, Port Deposit, No. 6	Nov. 1	18	Not found in 10 c. c.	Good
Spigot, Carson's drug store, Dr. H. L. Rich, Port Deposit, No. 7	Nov. 1	96	Present in 10 c. c.	Bad
Spigot, Junior Building, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 8	Nov. 1	72	Present in 10 c. c.	Bad
Fountain, R. Bond Bailiss, Port Deposit, No. 1	Nov. 1	2,400	Present in 10 c. c.	Very Bad
Fountain, R. Bond Bailiss, Port Deposit, No. 2	Nov. 1	390	Present in 10 c. c.	Very Bad
Spigot, T. F. Williams, Port Deposit, No. 3	Nov. 1	120	Present in 10 c. c.	Bad
Spigot, Carson's pharmacy, R. Bond Bailiss, Port Deposit, No. 4	Nov. 1	360	Present in 10 c. c.	Bad
Spigot, Central National Bank, R. Bond Bailiss, Port Deposit, No. 5	Nov. 1	34	Not found in 10 c. c.	Good
Spigot, National Bank of Port Deposit, R. Bond Bailiss, Port Deposit, No. 6	Nov. 1	960	Not found in 10 c. c.	Suspicious*
Spigot, Postoffice. R. Bond Bailiss. Port Deposit, No. 7	Nov. 1	72	Not found in 10 c. c.	Good
Spigot, Cameron's drug store, R. Bond Bailiss, Port Deposit, No. 8	Nov. 1	420	Present in 10 c. c.	Bad
Spigot, Dorcus & Co., R. Bond Bailiss, Port Deposit. No. 9	Nov. 1	108	Not found in 10 c. c.	Good
Spigot, fire engine house, R. Bond Bailiss, Port Deposit, No. 10	Nov. 1	192	Not found in 10 c. c.	Fair
Spring, Jacob Stiner, Dr. J. J. Stewart, Westminster, No. 1	Nov. 1	10	Not found in 10 c. c.	Good
Branch, Jacob Stiner, Dr. J. J. Stewart, Westminster, No. 2	Nov. 1	252	Present in 10 c. c.	Bad

Barn pump, Jacob Stiner, Dr. J. J. Stewart, Westminster, No. 3	Nov.	1	1,800	Present in 10 c. c.	Very Bad
Pump, Charles Fushman, Dr. J. J. Stewart, Westminster, No. 4	Nov.	1	360	Present in 10 c. c.	Bad
Spring, Kemp Murray, Dr. J. J. Stewart, Westminster, No. 5	Nov.	1	40	Present in 10 c. c.	Bad
Hydrant, Helen Cross, Ashland, A. M. Quick, No. 56	Nov.	1	3,600	Not found in 10 c. c.	Suspicious*
Hydrant, Robert Turnbaugh, Ashland, A. M. Quick, No. 57	Nov.	1	3,600	Not found in 10 c. c.	Suspicious*
Reservoir, Joshua Horner, Ashland, A. M. Quick, No. 58	Nov.	1	3,600	Not found in 10 c. c.	Suspicious*
Pump, William Phipps, Towson, A. M. Quick, No. 59	Nov.	11	1,800	Not found in 10 c. c.	Suspicious*
Well, John Sparks, St. Helena, Dr. Woodward, Sparrows Point	Nov.	11	1,500	Present in 10 c. c.	Bad
A. M. Quick, Water Enginer, No. 60	Nov.	11	Liquef.	Present in 10 c. c.	Bad
Well, school house, Dr. Naylor, Pikesville	Nov.	11	35	Present in 10 c. c.	Bad
Colored School for the Blind, Mr. Bledsoe, North avenue and Calvert street	Nov.	18	400	Present in 10 c. c.	Bad
Colored School for the Blind, Mr. Bledsoe, North avenue and Calvert street	Nov.	18	9,600	Not found in 10 c. c.	Suspicious*
Pump, N. R. McCardee, Gaithers	Nov.	18	72	Present in 10 c. c.	Bad
Tenant, N. R. McCardee, Gaithers	Nov.	18	66	Present in 10 c. c.	Bad
Store spigot, N. R. McCardee, Gaithers	Nov.	18	1,400	Present in 10 c. c.	Very Bad
Spring, Benj. Van Horn, Sherwood, A. M. Quick, No. 61	Nov.	18	Liquef.	Not found in 10 c. c.	Suspicious‡
Well, G. F. Hardesty, Dr. I. N. King, Barstow, No. 1	Nov.	18	Liquef.	Not found in 10 c. c.	Fair
Spigot, Annie Dowell, Prince Frederick, Dr. I. N. King, Barstow, No. 2	Nov.	18	Liquef.	Not found in 10 c. c.	Suspicious‡
Spigot, Dr. Robinson, Dr. I. N. King, Barstow, No. 3	Nov.	18	Liquef.	Not found in 10 c. c.	Fair
Well, M. L. Six, Bowen, Dr. I. N. King, Barstow, No. 4	Nov.	18	5,520	Present in 10 c. c.	Very Bad
Annie Simmons, Bowen, Dr. I. N. King, Barstow, No. 5	Nov.	18	Liquef.	Not found in 10 c. c.	Fair
Well, W. M. Jones, Bowen, Dr. I. N. King, Barstow, No. 6	Nov.	18	2,000	Not found in 10 c. c.	Suspicious*
J. B. Bunting, Prince Frederick, Dr. I. N. King, Barstow, No. 7	Nov.	18	4,800	Not found in 10 c. c.	Suspicious*
Spigot, L. L. Hutchins, Buena Vista, Dr. I. N. King, Barstow, No. 8	Nov.	18	6,730	Not found in 10 c. c.	Suspicious*
J. W. Robinson, Barstow, Dr. I. N. King, Barstow, No. 9	Nov.	18	Liquef.	Present in 10 c. c.	Bad
Spigot, C. E. Hall, Holland Point, Dr. I. N. King, Barstow, No. 10	Nov.	18	300	Present in 10 c. c.	Bad
Spigot, Dr. Hepburn, Annapolis	Nov.	26	165	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 1	Nov.	26	Liquef.	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 2	Nov.	26	Liquef.	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 3	Nov.	26	Liquef.	Present in 10 c. c.	Bad
Dr. J. H. Jenness, Rising Sun, No. 4	Nov.	26	Liquef.	Not found in 10 c. c.	Suspicious‡
Spring, Harry Korman, Monkton, A. M. Quick, No. 62	Nov.	26	2,400	Present in 10 c. c.	Very Bad
Spring, Charles Miller, Shane, A. M. Quick, No. 63	Nov.	26	930	Not found in 10 c. c.	Fair
Spring, Pleasant Talbot, Whitehall, A. M. Quick, No. 64	Nov.	26	180	Not found in 10 c. c.	Good
Well, H. S. Matthews, Oxford, No. 1	Nov.	29	450	Present in 10 c. c.	Bad†
Town pump, H. S. Matthews, Oxford, No. 2	Nov.	29	6,420	Present in 10 c. c.	Very Bad†
Well, drug store, H. S. Matthews, Oxford, No. 3	Nov.	29	1,320	Present in 10 c. c.	Very Bad†
Iron pump, W. R. Moore, H. S. Matthews, Oxford, No. 4	Nov.	29	6,360	Present in 10 c. c.	Very Bad†
Well, school, H. S. Matthews, Oxford, No. 5	Nov.	25	4,500	Present in 10 c. c.	Very Bad
Well, A. Lanimous, H. S. Matthews, Oxford, No. 6	Nov.	29	420	Present in 10 c. c.	Bad†
Iron pump, A. Hall, H. S. Matthews, Oxford, No. 7	Nov.	29	252	Present in 10 c. c.	Bad†
Wood pump, Wm. McKuezel, H. S. Matthews, Oxford, No. 8	Nov.	29	3,600	Present in 10 c. c.	Very Bad†
Iron pump, F. Hickman, H. S. Matthews, Oxford, No. 9	Nov.	29	366	Not found in 10 c. c.	Fair
Iron pump, Henry Stoddard, H. S. Mathews, Oxford, No. 10	Nov.	29	1,860	Present in 10 c. c.	Very Bad†
Filtered water, Dr. MacGill, Catonsville, No. 1	Dec.	6	4	Not found in 10 c. c.	Good
Boiled drinking water, Dr. MacGill, Catonsville, No. 2	Dec.	6	....	Not found in 10 c. c.	Good
Bathroom, Dr. MacGill, Catonsville, No. 3	Dec.	6	324	Not found in 10 c. c.	Good

TABLE No. 2—CONTINUED.

Tap, Stream, Well or Spring.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Infirmary, Dr. MacGill, Catonsville, No. 4	Dec. 6	3,180	Not found in 10 c. c.	Suspicious*
Dr. B. F. Price, Upperco, No. 1	Dec. 6	2,400	Not found in 10 c. c.	Suspicious*
Dr. B. F. Price, Upperco, No. 2	Dec. 6	9,000	Not found in 10 c. c.	Suspicious*
Spigot, Broadway, Dr. Scheller, Hagerstown, No. 1	Dec. 6	90	Not found in 10 c. c.	Good
Spigot, North Potomac street, Dr. Scheller, Hagerstown, No. 2	Dec. 6	100	Not found in 10 c. c.	Suspicious‡
North Jonathan street, Dr. Scheller, Hagerstown, No. 3	Dec. 6	78	Present in 10 c. c.	Bad
Salem avenue, Dr. Scheller, Hagerstown, No. 4	Dec. 6	180	Present in 10 c. c.	Bad
Winter street, Dr. Scheller, Hagerstown, No. 5	Dec. 6	109	Present in 10 c. c.	Bad
North Washington street, Dr. Scheller, Hagerstown, No. 6	Dec. 6	150	Not found in 10 c. c.	Suspicious‡
West Franklin street, Dr. Scheller, Hagerstown, No. 7	Dec. 6	150	Not found in 10 c. c.	Good
Office, Dr. Scheller, Hagerstown, No. 8	Dec. 6	126	Not found in 10 c. c.	Good
South Prospect street, Dr. Scheller, Hagerstown, No. 9	Dec. 6	192	Present in 10 c. c.	Bad
Well, Millard Godwin, Stevensons, Dr. H. A. Naylor, Pikesville, No. 1	Nov. 11	Liquef.	Not found in 10 c. c.	Good
Well, W. C. Cockey, Pikesville, Dr. H. A. Naylor, Pikesville, No. 2	Dec. 6	Liquef.	Not found in 10 c. c.	Good
Kitchen spigot, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 1	Dec. 11	25	Not found in 10 c. c.	Good
Spigot, Memorial Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 2	Dec. 11	18	Not found in 10 c. c.	Good
Spigot, Washington Hall, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 5	Dec. 11	52	Not found in 10 c. c.	Good
Spigot, Junior Building, Tome Institute, Dr. H. L. Rich, Port Deposit, No. 6	Dec. 11	75	Not found in 10 c. c.	Good
Spigot, Carson's drug store, Dr. H. L. Rich, Port Deposit, No. 7	Dec. 11	60	Not found in 10 c. c.	Good
Spigot, Carson's soda fountain, Dr. H. L. Rich, Port Deposit, No. 8	Dec. 11	100	Present in 10 c. c.	Bad
Well, Wilmer K. Bird, Dr. J. B. Slicer, Rising Sun, No. 2	Dec. 11	1,800	Present in 10 c. c.	Very Bad
Wilmer K. Bird, Dr. J. B. Slicer, Rising Sun, No. 3	Dec. 11	1,200	Present in 10 c. c.	Very Bad
Spring, Margaret A. McCann, Sherwood, A. M. Quick, No. 65	Dec. 11	580	Present in 10 c. c.	Bad
Beaver Dam, York turnpike, A. M. Quick	Dec. 11	480	Not found in 10 c. c.	Fair
Discharge from Sherwood distillery, A. M. Quick	Dec. 11	660	Not found in 10 c. c.	Fair
Beaver Dam, below Sherwood distillery, A. M. Quick	Dec. 11	1,500	Not found in 10 c. c.	Suspicious*
Western Run, Ashland bridge, A. M. Quick	Dec. 11	700	Not found in 10 c. c.	Fair
Gunpowder river, above mouth of Western Run, A. M. Quick	Dec. 11	5,200	Not found in 10 c. c.	Bad*
Small run, Warren, A. M. Quick	Dec. 11	240	Not found in 10 c. c.	Good
Merryman's branch, at Merryman's bridge road, A. M. Quick	Dec. 11	180	Not found in 10 c. c.	Good
Loch Raven, Meredith's Ford bridge, A. M. Quick	Dec. 11	300	Not found in 10 c. c.	Fair
Overshot Run, Meredith's Ford, A. M. Quick	Dec. 11	360	Not found in 10 c. c.	Fair
Well, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 1	Dec. 11	24,000	Not found in 10 c. c.	Bad*
Spring, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 2	Dec. 11	Liquef.	Present in 10 c. c.	Bad
Well, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 3	Dec. 11	3,600	Present in 10 c. c.	Bad
Well, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 4	Dec. 11	480	Present in 10 c. c.	Bad
Open well, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 5	Dec. 11	4,800	Present in 10 c. c.	Very Bad
Open well, R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun, No. 6	Dec. 11	1,380	Present in 10 c. c.	Very Bad
Well, F. R. Van Antwerp, Mt. Washington	Dec. 19	3,600	Not found in 10 c. c.	Suspicious‡
Cistern, Dr. R. C. Norris, Elkridge, No. 1	Dec. 19	1,800	Not found in 10 c. c.	Suspicious*

Spring, Dr. R. C. Norris, Elkridge, No. 2	Dec. 19	600	Not found in 10 c. c.	Fair
Spigot, Dr. S. S. Hepburn, Annapolis, No. 2	Dec. 19	120	Not found in 10 c. c.	Good
Well, E. F. Lawrence, Catonsville	Dec. 26	224	Present in 10 c. c.	Bad
Well, David Noland, Scott's Level, Dr. H. A. Naylor, Pikesville, No. 1	Dec. 26	50,000	Present in 10 c. c.	Very Bad
Stream, David Noland, Scott's Level, Dr. H. A. Naylor, Pikesville, No. 2	Dec. 26	50,000	Present in 10 c. c.	Very Bad
Dr. J. W. Long, Walkersville, No. 1	Dec. 26	2,400	Present in 10 c. c.	Very Bad
Dr. J. W. Long, Walkersville, No. 2	Dec. 26	1,600	Present in 10 c. c.	Very Bad
Well, David Garber, Mt. Rainer, Dr. Guy Latimer, Hyattsville	Dec. 30	3,600	Present in 10 c. c.	Bad
Pump, Thomas Kane, Bosley, A. M. Quick, No. 66	Dec. 26	180	Not found in 10 c. c.	Good
Pump, Thomas Kane, Bosley, A. M. Quick, No. 67	Dec. 26	420	Not found in 10 c. c.	Good

TABLE No. 3—TABULAR REPORT OF MILK EXAMINATIONS.

Source.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Kimball's farm, Dr. H. L. Rich, Port Deposit	Feb. 5	300,000	Not found in 1/1000 c. c.	Good
Kimball's farm, Dr. H. L. Rich, Port Deposit	Mar. 12	60,000	Not found in 1/1000 c. c.	Good
Jackson's farm, Dr. H. L. Rich, Port Deposit	Mar. 12	48,000	Not found in 1/1000 c. c.	Good
Dr. Marshall L. Price. State Board of Health	Mar. 27	360,000	Not found in 1/1000 c. c.	Good
Kimball's farm, Dr. H. L. Rich, Port-Deposit	April 20	8,000	Not found in 1/1000 c. c.	Good
Harry Willis, Betterton, W. S. Maxwell, Still Pond	May 10	30,000	Not found in 1/1000 c. c.	Good
Kimball's farm, Dr. H. L. Rich, Port Deposit	May 17	50,000	Not found in 1/1000 c. c.	Good
Mrs. John Bond's farm, Dr. H. L. Rich, Port Deposit	May 17	50,000	Not found in 1/1000 c. c.	Good
R. G. Nicholson, Dr. H. G. Simpers. Chestertown	Sept. 16	Liquef.	Present in 1/1000 c. c.	Bad
Centhony's dairy, Dr. H. G. Simpers, Chestertown	Sept. 16	1,080,000	Present in 1/1000 c. c.	Bad
Morris' dairy, Dr. H. G. Simpers, Chestertown	Sept. 16	360,000	Present in 1/1000 c. c.	Bad
Kimball's farm, Dr. H. L. Rich, Port Deposit	Sept. 30	Not made	Present in 1/1000 c. c.	Bad
R. G. Nicholson, Dr. Rohrer, State Board of Health	Oct. 7	4,000,000	Not found in 1/1000 c. c.	Suspicious*
Kimball's farm, Dr. H. L. Rich, Port Deposit	Oct. 14	3,600,000	Not found in 1/1000 c. c.	Fair
Tome Institute, Dr. H. L. Rich, Port Deposit	Oct. 14	5,120,000	Not found in 1/1000 c. c.	Suspicious*
Bond's farm, Dr. H. L. Rich, Port Deposit	Oct. 14	5,040,000	Present in 1/1000 c. c.	Very Bad.
Andrew T. Eben, Reisterstown road	Oct. 21	Liquef.	Not found in 1/1000 c. c.	Good
Tome Institute, Dr. H. L. Rich, Port Deposit	Nov. 1	1,000	Not found in 1/1000 c. c.	Good
Kimball's farm, Dr. H. L. Rich, Port Deposit	Nov. 1	3,000	Not found in 1/1000 c. c.	Good
Dr. S. S. Hepburn, Annapolis	Nov. 26	18,000000	Present in 1/1000 c. c.	Very Bad.
Dr. J. H. Jenness, Rising Sun	Nov. 26	9,000,000	Present in 1/1000 c. c.	Very Bad.
Gardiner dairy, Dr. J. Charles MacGill, Catonsville	Dec. 6	336,000	Not found in 1/1000 c. c.	Good
Kimball's dairy, Dr. H. L. Rich, Port Deposit	Dec. 11	50,000	Not found in 1/1000 c. c.	Good
Tome Institute dairy, Dr. H. L. Rich. Port Deposit	Dec. 11	50,000	Not found in 1/1000 c. c.	Good
Wilmer K. Bird, Dr. J. B. Slicer, Rising Sun	Dec. 11	Liquef.	Present in 1/1000 c. c.	Bad
Henry Miller, Parkeville	Dec. 11	120,000	Not found in 1/1000 c. c.	Good
Dr. J. H. Jenness, Rising Sun	Dec. 11	1,800,000	Present in 1/1000 c. c.	Bad
R. W. Steel, Colora, Dr. J. H. Jenness, Rising Sun	Dec. 11	2,400,000	Not found in 1/1000 c. c.	Suspicious*
Dr. S. S. Hepburn, Annapolis	Dec. 19	4,800,000	Present in 1/1000 c. c.	Bad
Dr. S. S. Hepburn, Annapolis	Dec. 19	2,500,000	Not found in 1/1000 c. c.	Suspicious*

TABLE No. 4—Tabular Report of Food Examinations.

Food and Source.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Oyster, Claiborne, R. C. Harden & Co.	Mar. 7	660	Not found	Good
Oyster, Claiborne, R. C. Harden & Co.	April 4	....	Present	Bad
Oyster, Claiborne, R. C. Harden & Co.	April 4	360	Not found	Good
Mud from oyster, Claiborne, R. C. Harden & Co.	April 4	....	Present	Bad
Mud from oyster, Claiborne, R. C. Harden & Co.	April 4	....	Present	Bad
Oyster, Claiborne, R. C. Harden & Co.	April 4	1,380	Not found	Good
Oyster, Crisfield	April 4	....	Not found	Good
Mud from oyster, Crisfield	April 4	....	Not found	Good
Mud from oyster, Crisfield	April 4	....	Present	Bad
Oyster, Crisfield	April 4	....	Present	Bad
Oyster, Crisfield	April 4	....	Not found	Good
Mud from oyster, Crisfield	April 4	....	Not found	Good
Oyster, Love Point, Chester river	April 17	1,800	Not found	Good
Mud from oyster, Love Point, Chester river	April 17	....	Present	Bad
Oyster, Love Point, Chester river	April 17	....	Present	Bad
Mud from oyster, Love Point, Chester river	April 17	....	Not found	Suspicious
Oyster, Love Point, Chester river	April 17	2,450	Present	Bad
Mud from oyster, Love Point, Chester river	April 17	....	Not found	Suspicious
Oyster, Eastern bay	May 8	Liquef.	Present	Bad
Mud from oyster, Eastern bay	May 8	....	Present	Bad
Oyster, Eastern bay	May 8	Liquef.	Not found	Good
Mud from oyster, Eastern bay	May 8	....	Not found	Good
Oyster, Eastern bay	May 8	720	Present	Bad
Mud from oyster, Eastern bay	May 8	....	Present	Bad
Oyster, Rappahannock river, north end	May 8	1,200	Not found	Good
Mud from oyster, Rappahannock river, north end	May 8	....	Not found	Good
Oyster, Rappahannock river, north end	May 8	480	Not found	Good
Mud from oyster, Rappahannock river, north end	May 8	....	Not found	Good
Oyster, Rappahannock river, north end	May 8	240	Not found	Good
Mud from oyster, Rappahannock river, north end	May 8	....	Not found	Good
Oyster, Bay Shore, West river	May 8	900	Not found	Good
Mud from oyster, Bay Shore, West river	May 8	....	Present	Bad
Oyster, Bay Shore, West river	May 8	320	Not found	Good
Mud from oyster, Bay Shore, West river	May 8	....	Present	Bad
Oyster, Bay Shore, West river	May 8	400	Present	Bad
Mud from oyster, Bay Shore, West river	May 8	....	Present	Bad
Oyster, Rappahannock river, 8 miles from north end	May 8	100	Not found	Good
Mud from oyster, Rappahannock river, 8 miles from north end	May 8	....	Not found	Good
Oyster, Rappahannock river, 8 miles from north end	May 8	720	Present	Bad
Mud from oyster, Rappahannock river, 8 miles from north end	May 8	....	Not found	Good

Oyster, Rappahannock river. 8 miles from north end	May	8	1,200	Not found	Good
Mud from oyster, Rappahannock river, 8 miles from north end	May	8	....	Not found	Good
Oyster, Claybank. Va	May	8	300	Not found	Good
Mud from oyster, Claybank, Va	May	8	....	Not found	Good
Oyster, Claybank, Va	May	8	240	Not found	Good
Mud from oyster, Claybank, Va	May	8	....	Not found	Good
Oyster, Claybank, Va	May	8	18	Not found	Good
Mud from oyster, Claybank, Va	May	8	....	Not found	Good
Oyster, East river, Va	May	8	5	Not found	Good
Mud from oyster, East river, Va	May	8	....	Not found	Good
Mud from oyster, East river, Va	May	8	....	Present	Bad
Oyster, East river, Va	May	8	30	Not found	Good
Oyster, East river, Va	May	8	1,800	Not found	Good
Mud from oyster, East river, Va	May	8	....	Present	Bad
Oyster from Patuxent river	May	8	Liquef.	Present	Bad
Mud from oyster, Patuxent river	May	8	....	Present	Bad
Oyster from Patuxent river	May	8	Liquef.	Not found	Good
Mud from oyster, Patuxent river	May	8	....	Not found	Good
Oyster from Patuxent river	May	8	Liquef.	Not found	Good
Mud from oyster, Patuxent river	May	8	....	Not found	Good
Strawberries from Patapsco Neck	July	6	....	Not found	Good
Strawberries from Patapsco Neck	July	6	....	Not found	Good
Strawberries from Anne Arundel county	July	6	....	Not found	Good
Cabbage from Patapsco Neck	July	6	....	Present	Bad
Cabbage from Patapsco Neck	July	6	....	Present	Bad
Lettuce from Patapsco Neck	July	6	....	Present	Bad
Lettuce from Patapsco Neck	July	6	....	Present	Bad
Cabbage from Patapsco Neck	July	6	....	Not found	Good
Cabbage from Patapsco Neck	July	6	....	Not found	Good
Lettuce from Patapsco Neck	July	6	....	Present	Bad
Green bean, unwashed	July	16	....	Present	Bad
Green bean, unwashed	July	16	....	Present	Bad
Green bean, unwashed	July	16	....	Not found	Good
Green bean, washed	July	16	....	Present	Bad
Green bean, washed	July	16	....	Not found	Good
Green bean, washed	July	16	....	Present	Bad
Cabbage, washed	July	18	....	Not found	Good
Cabbage leaf, washed	July	18	....	Present	Bad
Lettuce leaf, washed	July	24	....	Not found	Good
Lettuce leaf, washed	July	24	....	Present	Bad
Lettuce, 10 c. c. of water in which it washed	July	24	....	Not found	Good
Lettuce, 10 c. c. of litre washings	July	24	....	Present	Bad
Cabbage, 10 c. c. of litre washings	July	24	....	Present	Bad
Cabbage, 10 c. c. of litre washings	July	24	....	Present	Bad
Cabbage leaf, washed	July	24	....	Not found	Good
Cabbage leaf, washed	July	24	....	Present	Bad
Clam from Severn wharf, 5 gtts. juice	Aug.	1	....	Not found	Good

TABLE No. 4—Continued.

Food and Source.	Date.	Colonies per c. c.	Colon Bacillus.	Quality.
Clam from Severn wharf, 1 c. c. juice	Aug. 1	....	Not found	Good
Clam from Severn wharf, 1 c. c. juice	Aug. 1	....	Not found	Good
Clam from Claybank, Va., 1 c. c. juice	Aug. 1	....	Present	Bad
Clam from Claybank, Va., 1 c. c. juice	Aug. 1	....	Not found	Good
Clam from Claybank, Va., 1 c. c. juice	Aug. 1	....	Present	Bad
Cabbage leaf from Patapsco Neck	Aug. 12	....	Present	Bad
Cabbage from Patapsco Neck, 10 c. c. or litre washings	Aug. 12	....	Present	Bad
Oyster from Hampton bar, mud from rock	Sept. 20	....	Not found	Good
Oyster from Hampton bar, mud from rock	Sept. 20	....	Present	Bad
Oyster from Hampton bar, mud from rock	Sept. 20	....	Not found	Good
Oyster from Hampton bar, mud from plant bed	Sept. 20	....	Present	Bad
Oyster from Hampton bar, mud from plant bed	Sept. 20	....	Present	Bad
Oyster from Hampton bar, mud from plant bed	Sept. 20	....	Present	Bad
Oyster from Hampton bar, 1 c. c. juice from rock oyster	Sept. 20	....	Present	Bad
Oyster from Hampton bar, 1 c. c. juice from rock oyster	Sept. 20	....	Not found	Good
Oyster from Hampton bar, 1 c. c. juice from rock oyster	Sept. 20	....	Present	Bad
Oyster from Hampton bar, 1 c. c. juice from rock oyster	Sept. 20	....	Present	Bad
Oyster from Hampton bar, 1 c. c. juice from plant-bed oyster	Sept. 20	....	Present	Bad
Oyster from Hampton bar, 1 c. c. juice from plant-bed oyster	Sept. 20	....	Not found	Good
Oyster from Hampton bar, 1 c. c. juice from plant-bed oyster	Sept. 20	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, scrapings	Oct. 28	....	Not found	Good
Clam from York river, juice	Oct. 28	1,200	Not found	Good
Clam from York river, juice	Oct. 28	2,000	Not found	Good
Clam from York river, juice	Oct. 28	3,600	Not found	Good
Clam from York river, juice	Oct. 28	600	Present	Bad
Clam from York river, juice	Oct. 28	1,800	Not found	Good
Clam from York river, juice	Oct. 28	....	Not found	Good
Oyster from Chester river, juice	Nov. 6	2,700	Not found	Good
Oyster from Chester river, juice	Nov. 6	390	Not found	Good
Oyster from Chester river, juice	Nov. 6	1,320	Not found	Good
Oyster from Chester river, juice	Nov. 6	3,180	Not found	Good
Oyster from West river, juice	Nov. 15	3,600	Not found	Good
Oyster from West river, juice	Nov. 15	1,200	Not found	Good
Oyster from West river, juice	Nov. 15	1,500	Not found	Good
Oyster from West river, juice	Nov. 15	4,800	Not found	Good

Oyster from Cowart's wharf, Potomac river, juice	Dec. 10	210	Not found	Good
Oyster from Cowart's wharf, Potomac river, juice	Dec. 10	696	Not found	Good
Oyster from Cowart's wharf, Potomac river, juice	Dec. 10	3,600	Not found	Good
Oyster from Cowart's wharf, Potomac river, juice	Dec. 10	660	Not found	Good
Oyster from Choptank river, juice	Dec. 13	....	Present	Bad
Oyster from Choptank river, juice	Dec. 13	....	Not found	Good
Oyster from Chester river, juice	Dec. 13	....	Not found	Good
Oyster from Chester river, juice	Dec. 13	....	Not found	Good
Oyster from North Point, juice	Dec. 18	1,200	Present	Bad

Respectfully submitted,

WM. ROYAL STOKES, *Bacteriologist.*

CHEMIST'S REPORT.

Baltimore, January 28, 1908.

Dr. Marshall L. Price,
Secretary of State Board of Health,
Baltimore, Md.

Dear Sir: During the fiscal year ending January 8, 1908, the Chemical Department of the State Board of Health has made the following examinations:

94 Samples of water found free from pollution.
87 Samples of water polluted.
36 Samples of milk found to conform to State requirements.
26 Samples of milk found to contain preservatives or added coloring matter.
10 Samples of vinegar found to comply with State laws.
2 Samples of vinegar mislabeled "cider vinegar."
15 Miscelaneous examinations, of which special reports were made.

The work of the Chemical Department has increased during the past year, not only in the number of examinations made, but more particularly in the importance of work as pertaining to the general health. There has been an increase in the number of examinations made for the various local Health Officers, and it should be noted that the number of inquiries both by letter and by personal visits that this department has received from people interested in matters handled by this office has greatly increased.

Special investigations of the milks, waters and vinegars of various towns throughout the State were made, and it is recommended that these special examinations be increased both in number and scope.

The law pertaining to the labeling of vinegar has been generally observed. Though but few samples were analyzed, many samples were inspected, and, as the samples were evidently as labeled, analyses were not made.

Factory Wastes—There have been several investigations made in regard to proper disposal of wastes from distilleries, tanneries and canning plants. The problem of disposal of these and similar wastes to prevent pollution of water supplies and avoid the production of nuisances should receive attention.

The proper ventilation of some of our public institutions is now being investigated by a committee appointed for the purpose. Your chemist is a member of this committee and expects to obtain information which will be of value and great service to the public institutions of the State.

During the past year this department has been called upon to co-operate with the Health Department of Baltimore City in the work of improving the milk supplied to the residents of Baltimore. Repeated examinations have been made, and your chemist has appeared as a witness against the shippers of the adulterated milk.

Respectfully submitted,

W. B. D. Penniman, *Analyst.*

INSPECTOR'S REPORT.

January, 1907.

CONDEMNED AND TANKED.

December 7.—One unwholesome steer belonging to C. Leydecker at the Union Abattoir.

December 10.—One unwholesome steer belonging to S. G. Green, and three unwholesome sheep belonging to Kunkle Brothers, at the Union Stockyards.

December 12.—Two tubercular cows at Union Abattoir belonging to McCandless Company.

December 13.—Three tubercular cattle at Union Abattoir belonging to C. Thompson.

December 17.—One unwholesome steer belonging to Lehman Brothers at Union Abattoir, and two unwholesome sheep belonging to G. Massel at the Union Stockyards.

December 19.—One unwholesome cow belonging to G. Kratz at the Union Abattoir.

December 22.—One bruised steer belonging to Lehman Brothers at the Union Abattoir.

December 24.—Three hundred pounds of unwholesome beef belonging to C. Leydecker at the Union Abattoir, and one unwholesome cow belonging to C. Dorsey at the Union Stockyards.

December 26.—One unwholesome cow belonging to T. Gerber at the Union Abattoir.

January 2.—Three tubercular cows belonging to Gephart Brothers; three hogs having cholera, belonging to Swift & Co.; one hog having cholera, belonging to George & Co., at the Union Abattoir.

January 3.—Two tubercular cows belonging to C. Thompson and 200 pounds of beef belonging to George Haas, at the Union Abattoir.

SUMMARY.

PLACES.	Hogs.	Cattle.	Sheep.
Union Abattoir	4	15	...
Union Stockyards	...	2	5
Total (500 lbs. beef)	4	17	5

DISEASES.	Hogs.	Cattle.	Sheep.
Unwholesome	...	6	3
Tuberculosis	...	10	2
Bruised	...	1	...
Cholera	4	...	...
Total (500 lbs. beef)	4	17	5

OWNERS.	Hogs.	Cattle.	Sheep.
C. Leydecker (300 lbs. beef)	...	1	...
S. G. Green	...	1	...
Kunkle Bros.	...	...	3
McCandless Co.	...	2	...
C. Thompson	...	5	...
Lehman Bros	...	2	...
G. Massel	...	...	2
G. Kratz	...	1	...
C. Dorsey	...	1	...
T. Gerber	...	1	...
Gephart Bros	...	3	...
Swift & Co	3	...	...
George & Co	1	...	...
Geo. Haas (200 lbs. beef)	...	...	...
Total (500 lbs. beef)	4	17	5

FEBRUARY, 1907.

CONDEMNED AND TANKED.

January 8.—One unwholesome cow belonging to S. Fox and three unwholesome sheep belonging to C. Brown, at the Union Stockyards.

January 9.—One tubercular cow belonging to A. Grebe and one tubercular cow belonging to McCandless Reining, at the Union Abattoir.

January 10.—Three tubercular cows belonging to W. Gephart; two tubercular cows belonging to F. Manger, at the Union Abattoir, and two unwholesome calves belonging to— Wantz, at Fulton Station.

January 11.—One unwholesome cow belonging to G. Massel, at the Union Stockyards.

January 14.—Five unwholesome sheep at Pennsylvania Avenue Abattoir and one unwholesome cow in car at Pennsylvania Railroad Station belonging to G. Rupersberger.

January 15.—Two hogs having cholera belonging to C. Brunier, at the Union Abattoir.

January 18.—One unwholesome cow belonging to J. Borton, at the Union Stockyards.

January 21.—Three unwholesome sheep belonging to C. Davis, at Union Stockyards; and one tubercular cow at the Union Abattoir belonging to W. Gibson.

January 22.—Two hogs having cholera, belonging to Swift & Co.; two tubercular cows belonging to Gephart Brothers, and one tubercular bull belonging to M. Lambert, at the Union Abattoir.

January 23.—Two unwholesome steers belonging to Lehman Brothers, at the Union Abattoir.

January 24.—Two hogs having cholera, at the Union Abattoir, belonging to Swift & Co.

January 28.—One tubercular cow belonging to McCandless Company, and four unwholesome sheep belonging to C. Brown, the place of condemnation in both instances being omitted.

January 29.—One unwholesome steer, at the Union Stockyards, belonging to R. J. Rollins.

January 30.—One hog having cholera, at the Union Abattoir, belonging to Swift & Co.

January 31.—Two tubercular cows, belonging to F. Haas, place of condemnation not given; two unwholesome calves, belonging to J. Murray, at Fulton Station.

February 2.—Two tubercular cows, at Union Abattoir, belonging to McCandless Company.

February 4.—One unwholesome steer, belonging to J. Bartze, at the Union Stockyards.

February 5.—One unwholesome calf belonging to P. Yates, and three unwholesome sheep belonging to P. Garvis, at the Union Stockyards.

February 6.—One tubercular cow belonging to A. Grebe, at the Union Stockyards, and one tubercular cow belonging to McCandless Company, at the Union Abattoir.

February 7.—Two hogs having cholera, belonging to Swift & Co., at the Union Abattoir.

February 8.—Two hogs having cholera, belonging to George Company, at the Union Abattoir.

SUMMARY.

OWNERS.	Hogs.	Cattle.	Sheep.
S. Fox	....	1	....
C. Brown	....	....	7
A. Grebe	....	2	....
McCandless Reining	....	5	....
W. Gephart	....	3	....
F. Manger	....	2	....
— Wantz	....	2	....
G. Massel	....	1	....
G. Rupersberger	....	1	5
C. Brunier	2	....	....
J. Borton	....	1	....
C. Davis	....	....	3
W. Gibson	....	1	....
Swift & Co	7	....	....
Gephart Bros	....	2	....
M. Lambert	....	1	....
Lehman Bros	....	2	....
R. J. Rollins	....	1	....
F. Haas	....	2	....
J. Murray	....	2	....
J. Bartze	....	1	....
P. Yates	....	1	....
P. Garvis	....	....	3
George Company	2	....	....
Total	11	31	18

DISEASES.	Hogs.	Cattle.	Sheep.
Unwholesome	....	13	18
Tuberculosis	....	18	....
Cholera	11	....	....
Total	11	31	18

PLACE OF CONDEMNATION.	Hogs.	Cattle.	Sheep.
Union Stockyards	....	7	9
Union Abattoir	11	16	....
Fulton Station	....	4	....
Penna. Ave. Abattoir	....	....	5
Penna. R. R. cars	....	1	....
Unknown	....	3	4
Total	11	31	18

MARCH, 1907.

February 11.—One unwholesome steer belonging to W. Whiteley and two unwholesome sheep belonging to Peppler, at the Union Stockyards.

February 12.—Two hogs having cholera, belonging to Swift & Co., at the Union Abattoir.

February 13.—Two tubercular cows belonging to C. T. Thompson, at the Union Abattoir.

February 14.—One tubercular calf belonging to G. Rupersberger, at Pennsylvania Avenue Abattoir, and two tubercular calves at Fulton Station.

February 18.—One tubercular steer at the Union Stockyards, belonging to P. Warner.

February 19.—Four unwholesome sheep belonging to C. Brown, at the Union Stockyards; one tubercular steer belonging to C. Leydecker; two hogs having cholera, at the Union Abattoir, belonging to Swift & Co.

February 20.—Two tubercular cows belonging to H. E. Eckert, at the Union Abattoir.

February 21.—Two tubercular cows, at Union Abattoir, belonging to McCandless & Co.

February 25.—Two unwholesome sheep belonging to E. Blackshire and two unwholesome calves belonging to Brown & Co., at the Union Stockyards, and one unwholesome steer, at the Union Abattoir, belonging to Gephart Brothers.

February 26.—One tubercular cow belonging to A. Grebe, at the Union Abattoir.

March 4.—One unwholesome steer belonging to C. Duncan and five unwholesome sheep belonging to Whitman, at the Union Stockyards, and one unwholesome calf, at Pennsylvania Avenue Abattoir, belonging to G. Plitt.

March 5.—One unwholesome cow belonging to H. Eckert, at the Union Abattoir.

March 6.—Three tubercular cows, at the Union Abattoir, belonging to McCandless Company.

March 7.—Two tubercular cows belonging to H. Eckert and one tubercular cow belonging to McCandless Company, at the Union Abattoir, and one tubercular cow belonging to F. Haas, on Brown's Lane.

March 8.—One tubercular cow belonging to A. Grebe; abattoir not given.

SUMMARY.

PLACES.	Hogs.	Cattle.	Sheep.
Union Stockyards	....	5	12
Union Abattoir	3	14	....
Penna. Avenue	....	2	....
Fulton Station	....	2	....
Brown's Lane	....	1	....
Unknown	....	2	....
	3	26	12

DISEASES.	Hogs.	Cattle.	Sheep.
Tuberculosis	....	19	....
Unwholesome	....	7	12
Cholera	3	....	....
	3	26	12

OWNERS.	Hogs.	Cattle.	Sheep.
W. Whiteley	....	1	....
Peppler	....	....	1
Swift & Co.	3	....	....
C. Thompson	....	1	....
G. Rupersberger	....	1	....
Unknown	....	2	....
P. Warner	....	1	....
C. Leydecker	....	1	....
C. Brown	....	....	4
H. Eckert	....	5	....
McCandless Co.	....	6	....
Gephart Bros.	....	1	....
E. Blackshire	....	....	2
Brown & Co.	....	2	....
A. Grebe	....	2	....
C. Duncan	....	1	....
Whitman	....	....	5
G. Plitt	....	1	....
F. Haas	....	1	....
	3	26	12

APRIL, 1907.

CONDEMNED AND TANKED.

March 11.—One unwholesome cow belonging to G. Dorsey and two unwholesome sheep belonging to T. Merritt, at the Union Stockyards.

March 12.—One tubercular cow belonging to F. Menger, at the Union Abattoir.

March 13.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir.

March 14.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir.

March 18.—One unwholesome steer belonging to W. Grover and two unwholesome sheep belonging to G. Massel, at the Union Stockyards.

March 20.—Three tubercular cows belonging to W. Eckert and two tubercular cows belonging to McCandless Company, at the Union Abattoir.

March 21.—Two tubercular cows belonging to C. Thompson, one tubercular cow belonging to McCandless Company, at the Union Abattoir.

March 22.—Two unwholesome calves belonging to R. Murray, at Fulton Station.

March 25.—One unwholesome steer, at the Union Stockyards, belonging to T. Davis, and one unwholesome calf belonging to B. Wolf.

March 26.—One tubercular cow, at the Union Abattoir, belonging to C. Thompson; one tubercular cow belonging to T. Manger and one hog having cholera, belonging to Swift & Co.

March 27.—Four tubercular cows belonging to McCandless Company, at the Union Abattoir.

March 28.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir, and two unwholesome calves, at the Northern Central Railroad.

April 1.—One bruised steer, at Pennsylvania Railroad.

April 3.—Eight tubercular cows belonging to McCandless Company, at the Union Abattoir.

April 5.—One unwholesome calf, at the Baltimore Butchers' Abattoir, belonging to G. Wantz.

SUMMARY.

DISEASE.	Hogs.	Cattle.	Sheep.
Tuberculosis	....	30	....
Cholera	1	....	....
Unwholesome	....	9	4
Bruised	....	1	....
Total	1	40	4

PLACE.	Hogs.	Cattle.	Sheep.
Union Abattoir	1	30	....
Union Stockyards	....	4	4
Penna. R. R	....	1	....
N. C. R. R	....	2	....
Baltimore Butchers' Abattoir	....	1	....
Fulton Station	....	2	....
Total	1	40	4

OWNERS.	Hogs.	Cattle.	Sheep.
McCandless Co	....	22	....
Swift & Co	1	....	....
F. Manger	....	2	....
G. Wantz	....	1	....
G. Dorsey	....	1	....
T. Merritt	....	....	2
W. Grover	....	1	....
G. Massel	....	....	2
W. Eckert	....	3	....
C. Thompson	....	3	....
R. Murray	....	2	....
T. Davis	....	1	....
B. Wolf	....	1	....
Unknown	....	3	....
Total	1	40	4

MAY, 1907.

CONDEMNED AND TANKED.

April 8.—One unwholesome cow, at the Union Abattoir, belonging to J. Katzen.

April 9.—Three unwholesome sheep, at the Union Stockyards, belonging to Brown & Co.

April 10.—Two tubercular cows, at Union Abattoir, belonging to C. Thompson.

April 11.—Three tubercular cows belonging to McCandless Company, at the Union Abattoir.

April 15.—One unwholesome steer belonging to McCandless Company, at the Union Abattoir.

April 16.—One tubercular cow at the Union Abattoir, belonging to F. Manger.

April 17.—Three tubercular cows, at the Union Abattoir, belonging to McCandless Company.

April 18.—Two unwholesome calves belonging to G. Rupersberger, at Pennsylvania Avenue.

April 19.—Six tubercular cows belonging to Schumacher, at the Baltimore Butchers' Abattoir.

April 22.—One unwholesome steer belonging to Eden Company, at the Union Stockyards, and three unwholesome sheep belonging to J. Gibson, at the Union Stockyards.

April 23.—One tubercular cow belonging to McCandless Company, at the Union Abattoir.

April 24.—Three tubercular cows, at the Union Abattoir, belonging to McCandless Company.

April 25.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir, and two unwholesome calves, at the Baltimore Butchers' Abattoir, belonging to P. Gammon.

April 26.—One unwholesome calf, at the Baltimore Butchers' Abattoir, belonging to B. Cougler.

SUMMARY.

DISEASE.	Hogs.	Cattle.	Sheep.
Unwholesome	3	6	3
Tuberculosis	....	24	....
	3	30	3
PLACES.			
Union Abattoir	....	16	....
Union Stockyards	3	2	3
Penna. Avenue	....	2	....
Balto. Butchers' Aboir	....	10	....
	3	30	3

OWNERS.	Hogs.	Cattle.	Sheep.
C. Katzen	....	1	....
Brown & Co.	....	....	3
C. Thompson	....	2	....
McCandless	....	13	....
F. Manger	....	1	....
G. Rupersberger	....	2	....
Schumacher	....	6	....
Eden Co.	....	1	....
J. Gibson	3	....	....
P. Gammon	....	3	....
B. Cougler	....	1	....
	3	30	3

JUNE, 1907.

CONDEMNED AND TANKED.

April 29.—One unwholesome steer belonging to Greer & Davis, at the Union Stockyards.

April 30.—Three tubercular cows belonging to H. Eckert, at the Union Abattoir, and two unwholesome sheep belonging to T. Yateman, at the Union Stockyards.

May 1.—One unwholesome calf belonging to Gephart Brothers, at Baltimore Butchers' Abattoir; two tubercular cows belonging to C. Thompson and three tubercular cows belonging to McCandless Company, at the Union Abattoir.

May 2.—Five unwholesome calves belonging to H. Eckert, at G. Plitt's Abattoir, Pennsylvania avenue.

May 3.—One unwholesome cow belonging to McCandless Company, at the Union Abattoir.

May 6.—One unwholesome steer belonging to J. Roller and three unwholesome sheep belonging to J. Butler, at the Union Stockyards.

May 8.—Two unwholesome calves belonging to C. Plitt, at Pennsylvania Avenue Abattoir.

May 9.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir, and one unwholesome calf belonging to R. Murray, at the Baltimore Butchers' Abattoir.

May 10.—One tubercular cow belonging to H. Ogel, at the Baltimore Butchers' Abattoir.

May 13.—One unwholesome steer belonging to A. Mooney, at the Union Abattoir, and two unwholesome sheep belonging to J. Massel, at the Union Stockyards.

May 14.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir, and two unwholesome calves belonging to Messersmith, at the Pennsylvania Avenue Abattoir.

May 15.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir.

May 20.—One unwholesome cow belonging to D. Gibson and one unwholesome steer belonging to N. Duncan, at the Union Stockyards.

May 21.—Two unwholesome sheep belonging to P. Jarvis, at the Union Stockyards, and two unwholesome calves, at the Baltimore Butchers' Abattoir, belonging to H. Eckert.

May 22.—Three tubercular cows belonging to D. Fox, at the Union Abattoir, and one unwholesome calf belonging to G. Plitt, at the Pennsylvania Avenue Abattoir.

May 23.—Two unwholesome calves, at Fulton Station, the owner being unknown.

May 24.—Two tubercular cows belonging to C. Thompson, at the Union Abattoir.

May 27.—One unwholesome steer belonging to W. Rehmey, and two unwholesome sheep belonging to C. Booton, at the Union Stockyards.

May 28.—One tubercular cow belonging to McCandless Company, at the Union Abattoir, and two unwholesome calves belonging to A. Mooney, at Pennsylvania Avenue Abattoir.

May 29.—One tubercular cow belonging to McCandless Company, at the Union Abattoir.

June 4.—Two tubercular cows belonging to McCandless Company, at the Union Abattoir, and two unwholesome calves belonging to G. Smith, at the Baltimore Butchers' Abattoir, and one unwholesome calf belonging to G. Plitt, at Pennsylvania Avenue Abattoir.

June 5.—Two unwholesome calves belonging to J. Smidt, at Frederick Avenue Abattoir.

June 7.—One unwholesome sheep, at the Union Abattoir, belonging to C. Leydecker.

SUMMARY.

OWNERS.	Hogs.	Cattle.	Sheep.
Greer & Davis	....	1	....
H. Eckert	....	10	....
T. Yateman	....	....	2
Gephart Bros.	....	1	....
C. Thompson	....	4	....
McCandless Co	....	14	....
J. Roller	....	1	....
J. Butler	....	....	3
G. Plitt	....	4	....
R. Murray	....	1	....
H. Ogel	....	1	....
A. Mooney	....	3	....
J. Massel	....	....	2
Messersmith	....	2	....
I. Gibson	....	1	....
N. Duncan	....	1	....
P. Jarvis	....	....	2
D. Fox	....	3	....
Unknown	....	2	....
W. Rehmey	....	1	....
C. Booton	....	....	2
J. Smith	....	2	....
J. Schmidt	....	2	....
C. Leydecker	....	....	1
Total	....	54	12

DISEASE.	Hogs.	Cattle.	Sheep.
Tuberculosis	....	24	....
Unwholesome	....	30	12
Total	....	54	12

PLACE.	Hogs.	Cattle.	Sheep.
Union Abattoir	....	25	1
Union Stockyards	....	5	11
Baltimore Butchers' Abattoir	....	7	....
Pennsylvania Avenue	....	13	....
Fulton Station	....	2	....
Frederick Avenue	....	2	....
Total	....	54	12

SUMMARY FOR JULY.

DISEASES.	Hogs.	Cattle.	Sheep.
Unwholesome	....	16	6
Tuberculosis	....	6	....
Lump Jaw	....	3	....
	....	25	6

PLACES.	Hogs.	Cattle.	Sheep.
Union Stockyards	....	7	6
Baltimore Butchers' Abattoir	....	3	....
Fulton Station	....	5	....
Union Abattoir	....	4	....
Penna. Ave. Abattoir	....	5	....
Linthicum's Express	....	1	....
	....	25	6

OWNERS.	Hogs.	Cattle.	Sheep.
N. Dorsey	....	1	....
W. Ridgeley	....	....	2
P. Gaimon	....	2	....
G. Snyder	....	1	....
F. Furman	....	2	....
McCandless Co	....	4	....
S. Sondheimer	....	1	....
G. Plitt	....	3	....
W. Driver	....	....	2
Gephart Bros	....	1	....
W. Murray	....	1	....
C. Downs	....	1	....
H. Haas	....	1	....
Linthicum's Express	....	1	....
S. Grimes	....	1	....
G. Rupersberger	....	1	....
S. Graves	....	....	2
G. Brown	....	1	....
T. Wantz	....	2	....
G. Lewis	....	1	....
	....	25	6

Total Condemnations, 31.

SUMMARY FOR AUGUST.

DISEASES.	Hogs.	Cattle.	Sheep.
Unwholesome	....	14	7
Tuberculosis	....	3	....
Lump Jaw	....	1	...
	....	18	7

PLACES.	Hogs.	Cattle.	Sheep.
Baltimore Butchers' Abattoir	....	12	....
Penna. Ave. Abattoir	....	1	....
Union Stockyards	....	5	7
	....	18	7

OWNERS.	Hogs.	Cattle.	Sheep.
G. Hoffman	....	1	....
B. Owens	....	1	....
T. Buckley	....	1	....
Colley Bros	....	1	....
M. Murphy	....	1	....
G. Plitt	....	1	....
G. Lueker	....	1	....
L. Creamer	....	1	....
N. Duncan	....	1	....
S. Stallings	....	....	2
W. Smith	....	1	....
P. Michaels	....	1	....
F. Browning	....	....	3
M. Regg	....	2	....
J. Roberts	....	1	....
G. Smith	....	1	....
G. Zimmerman	....	1	....
C. Brown	....	....	2
P. Yates	....	1	....
C. Pepper	....	1	....
	....	18	7

Total Condemnations, 25.

SUMMARY FOR SEPTEMBER.

DISEASES.	Hogs.	Cattle.	Sheep.
Unwholesome	....	7	6
Tuberculosis	....	4	....
	....	11	6

PLACES.	Hogs.	Cattle.	Sheep.
Baltimore Butchers' Abattoir	....	6	....
Union Stockyards	....	2	6
Penna. Ave. Abattoir	....	2	....
Wilkens Avenue	....	1	....
	....	11	6

OWNERS.	Hogs.	Cattle.	Sheep.
J. Rose	....	1	....
C. Grover	....	....	3
G. Plitt	....	2	....
T. Sterling	....	1	....
Schumacher	....	3	....
B. Cole	....	1	....
H. Wolfe	....	1	....
W. M. Rollins	....	1	....
L. Weil	....	1	....
Brown Co	....	....	3
	....	11	6

Total condemnations, 17.

SUMMARY FOR OCTOBER.

DISEASES.	Hogs.	Cattle.	Sheep.
Tuberculosis	....	5	....
Unwholesome	....	11	....
Cholera	2	....	6
	2	16	6

PLACES.	Hogs.	Cattle.	Sheep.
Baltimore Butchers' Abattoir	....	7	....
Union Abattoir	2	1	....
Union Stockyards	....	6	6
Penna. Ave. Abattoir	....	2	....
	2	16	6

OWNERS.	Hogs.	Cattle.	Sheep.
J. Lueker	....	1	....
H. Fox	....	1	....
T. Hopkins	....	....	2
Massel	....	2	....
G. Snyder	....	1	....
G. Plitt	....	1	....
Gephart Bros.	....	1	....
D. Davis	....	1	....
J. Hardy	....	1	....
R. Murray	....	1	....
T. Butler	....	....	2
S. Sondheimer	....	1	....
G. Peppler	....	1	....
W. Snyder	....	1	....
S. Messersmith	....	1	....
D. Roller	....	1	....
J. King	....	....	2
J. Barker	2	....	....
M. Manger	....	1	....
	2	16	6

Total Condemnations, 24.

SUMMARY FOR NOVEMBER.

DISEASES.	Hogs.	Cattle.	Sheep.	OWNERS.	Hogs.	Cattle.	Sheep.
Unwholesome	....	7	2	W. Gephart	....	1	....
Tuberculosis	....	7	....	F. Manger	....	4	....
				R. Murray	....	1	....
	....	14	2	G. Plitt	....	1	....
				Lehman Bros	....	1	....
PLACES.				M. Lambert	....	1	....
				G. Weil	....	1	....
Baltimore Butchers'				T. Riggen	....	1	....
Abattoir	....	10	....	G. Snyder	....	1	....
Penna. Ave. Abattoir	....	1	....	T. Underwood	....	....	2
Union Stockyards	....	2	2	J. Rose	....	1	....
Union Abattoir	....	1	....	McCandless Co	....	1	....
	....	14	2		....	14	2

Total condemnations, 16.

SUMMARY FOR DECEMBER.

DISEASES.	Hogs.	Cattle.	Sheep.	OWNERS.	Hogs.	Cattle.	Sheep.
Unwholesome	....	14	5	Wagner Bros	....	3	....
Tuberculosis	....	7	....	C. Thompson	....	4	....
Pericarditis	....	1	....	F. Manger	....	2	....
				H. Eckert	....	7	....
	....	22	5	W. Schmidt	....	3	....
				G. Green	....	1	....
PLACES.				T. Mealey	....	....	2
				T. Crook	....	....	1
				T. Alban	....	1	....
Union Stockyards	....	6	4	C. Brown	....	....	2
Baltimore Butchers'				C. Peppler	....	1	....
Abattoir	....	10	1		....	22	5
Penna. Ave. Abattoir	....	2	....				
Union Abattoir	....	2	....				
Greenwald Pa. Co.	....	1	....				
Fulton Station	....	2	....				
	....	22	5				

Total condemnations, 27.

SUMMARY.

Condemned and Tanked During 1907.

Diseases.	Hogs.	Cattle.	Sheep.
Unwholesome	3	140	84
Tuberculosis	....	157	2
Bruised	....	2	....
Cholera	21	....	....
Lump Jaw	....	4	....
Pericarditis	....	1	....
	24	304	86

Places.	Hogs.	Cattle.	Sheep.
Union Abattoir	21	123	1
Union Stockyards	3	53	75
Fulton Station	....	17	....
Pennsylvania Avenue	....	30	5
Pennsylvania R. R. cars	....	2	....
Brown's Lane	....	1	....
Northern Central R. R. cars	....	2	....
Baltimore Butchers' Abattoir	....	66	1
Frederick Avenue	....	2	....
Linthicum's Express	....	1	....
Wilkens Avenue	....	1	....
Greenwald Packing Company	....	1	....
Unknown	....	5	4
	24	304	86

CONDEMNED AND TANKED DURING 1907.—*Continued.*

OWNERS.	Hogs.	Cattle.	Sheep.
T. Alban	....	1	....
J. Barber	2	....	....
J. Bartze	....	1	....
E. Blackshire	....	....	2
C. Booton	....	....	2
J. Borton	....	1	....
Brown & Co	....	2	6
C. Brown	....	....	15
G. Brown	....	1	....
F. Browning	....	....	3
C. Brunier	2	....	....
T. Buckley	....	1	....
J. Butler	....	....	3
T. Butler	....	....	2
B. Cole	....	1	....
Colley Bros	....	1	....
B. Cougler	....	1	....
L. Creamer	....	1	....
T. Crook	....	....	1
C. Davis	....	....	3
D. Davis	....	1	....
T. Davis	....	1	....
C. Dorsey	....	2	....
N. Dorsey	....	1	....
C. Downes	....	1	....
W. Driver	....	....	2
C. Duncan	....	1	....
N. Duncan	....	2	....
H. Eckert	....	22	....
W. Eckert	....	3	....
Eden Co	....	1	....
D. Fox	....	3	....
H. Fox	....	1	....
S. Fox	....	1	....
F. Furman	....	2	....
P. Gammon	....	5	....
George & Co	3	....	....
W. Gephart	....	4	....
Gephart Bros	....	9	....
T. Gerber	....	1	....
I. Gibson	....	1	....
J. Gibson	3	....	....
W. Gibson	....	1	....
S. Graves	....	....	2
Amount carried forward	10	74	41

OWNERS.	Hogs.	Cattle.	Sheep.
Amount brought forward	10	74	41
A. Grebe	....	4	....
S. G. Green	....	2	....
Greer & Davis	....	1	....
S. Grimes	....	1	....
C. Grover	....	....	3
W. Grover	....	1	....
T. Haas	....	3	....
H. Haas	....	1	....
J. Hardy	....	1	....
G. Hoffman	....	1	....
T. Hopkins	....	....	2
P. Jarvis	....	....	5
J. King	....	....	2
G. Kratz	....	1	....
C. Kratzen	....	1	....
Kunkle Bros	....	....	3
M. Lambert	....	2	....
Lehmen Bros	....	5	....
G. Lewis	....	1	....
C. Leydecker	....	2	1
Linthicum's Express	....	1	....
G. Lueker	....	1	....
J. Lueker	....	1	....
F. Manger	....	11	....
M. Manger	....	1	....
G. Massel	....	1	....
J. Massel	....	2	2
McCandless Co	....	62	....
McCandless Reining	....	5	....
T. Mealey	....	....	2
T. Merritt	....	....	2
Messersmith	....	3	....
P. Michaels	....	1	....
A. Mooney	....	3	....
M. Murphy	....	1	....
J. Murphy	....	2	....
R. Murray	....	5	....
W. Murray	....	1	....
H. Ogle	....	1	....
B. Owens	....	1	....
C. Peppler	....	3	1
G. Plitt	....	13	....
Amount carried forward	10	221	65

CONDEMNED AND TANKED DURING 1907.—*Continued.*

OWNERS.	Hogs.	Catte.	Sheep.	OWNERS.	Hogs.	Cattle.	Sheep.
Amount brought forward........	10	221	65	Amount brought forward.........	10	259	72
W. Rehmey..........	....	1	....	S. Stallings..........	....	....	2
M. Regg............	....	2	....	S. Sondheimer.......	....	2	....
W. Ridgeley.........	....	....	2	Swift & Co..........	14	....	....
T. Riggen............	....	1	....	C. Thompson........	....	19	....
J. Roberts..........	....	1	....	T. Underwood.......	....	....	2
D. Roller............	....	1	....	Wagner Bros........	....	3	....
J. Roller............	....	1	....	G. Wantz...........	....	3	....
H. M. Rollins.......	....	1	....	T. Wantz............	....	2	....
R. J. Rollins........	....	1	....	P. Warner..........	....	....	5
J. Rose..............	....	2	....	G. Weil..............	....	1	....
G. Rupersberger....	....	5	5	L. Weil..............	....	1	....
W. Schmidt.........	....	3	....	W. Whiteley........	....	1	....
J. Schmidt..........	....	2	....	Whitman............	....	1	....
Schumacher.........	....	9	....	B. Wolf..............	....	1	....
G. Smith............	....	1	....	H. Wolf..............	....	1	....
J. Smith............	....	2	....	T. Yateman..........	....	....	2
W. Smith............	....	1	....	P. Yates............	....	2	....
G. Snyder...........	....	3	....	G. Zimmerman.......	....	1	....
W. Snyder..........	....	1	....	Unknown............	....	7	....
Amount carried forward........	10	259	72	Total............	24	304	86

PARTIAL CONDEMNATIONS DURING 1907.

CAUSES AND PARTS.	PLACE.	OWNER.
300 pounds of beef..........	Union Abattoir.....	C. Leydecker.
200 pounds of beef..........	Union Abattoir.....	Geo. Haas.

Respectfully submitted,

CHARLES N. MITTEN,

Inspector.

CLERICAL REPORT.

(1907.)

Number of letters written	5,709
Number of typewritten sheets, exclusive of letters	75
Mimeograph letters	7,463
Number of second-class packages	1,962
Number of birth certificates filed	9,367
Number of death certificates filed	9,604

Distribution of Prophylactic Supplies to Tuberculous Patients.

Supplies issued in crates to local health officers—Number of packages	630
Supplies issued from the office of the State Board of Health—Number of packages	602
Supplies issued in bulk (not in packages) to Instructive Visiting Nurses' Association, Bayview Tuberculosis Hospital, Phipps' Dispensary, etc.—Number of patients supplied	1,669

Sent vouchers to 53 local registrars for the registration of births and deaths for the quarters ending December 31, 1907; March 31, 1907; June 30, 1907; September 30, 1907.

Respectfully submitted,

M. L. RULLMAN, *Chief Clerk.*

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